

Market Development and Business Growth Strategy for Light Weight Zeolite Concrete

by

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**MARKET DEVELOPMENT STRATEGY FOR LIGHTWEIGHT
ZEOLITE CONCRETE**

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INTRODUCTION

Polar Powders & Technologies Inc. (PPT) acknowledges a financial contribution by the Canada-Alberta Partnership on Minerals through the Alberta Department of Energy and the National Research Council (NRC). The research and development work was conducted by the Institute for Research and Construction (IRC) of the NRC.

Lightweight zeolite concrete (LZC) is a new product developed by technologies resulting from research and development. There is an increased demand by society, for new materials to replace traditional building materials. These demands are a result of society's changing values and recognition that our natural resources are finite. The development of lightweight zeolite concrete is a response to this growing demand for new materials and sustainable exploitation of our natural resources.

The research and development program resulted in a new technology, for which a U.S. patent was granted in October 1995. I will not deal with details of the processes or methodologies except to state that the LZC formulations are, for the most part, 80% natural zeolite, which are subsequently cured in a conventional manner. The resulting material has the following desirable characteristics.

1. The material can be cast and is dimensionally accurate as well as machineable, which facilitates reduced construction time and costs.
2. The material can be made with compressive strengths in a range of 5-30 MPa, which meets a broad spectrum of needs in the construction industry.
3. The dry density can be made in the range of 500-1500 kg/m³ (lightweight).
4. Excellent thermal properties and acoustical properties.
5. Fire resistant, impervious to rot and insects.
6. Flexibility, which allows for production of various size blocks, panels and reinforced members for walls, floors and roofs.
7. Good to excellent engineering properties of density, pore structure, permeability, efflorescence, specific heat, thermal conductivity and elastic modulus.
8. Good to exceptional durabilities which are sulphate resistant, acid resistant, carbonation resistant and frost resistant.

THE OPPORTUNITY

Changing Traditions

The building industry is changing. Today's generation of builders is increasingly more sophisticated and relies heavily on cost benefit analysis of completed construction systems. These builders are more likely to change to new materials and techniques if they provide greater in place value over traditional systems.

Wood products are the traditional dimensional material for building purposes. Wood products use, as a depleting natural resource, has resulted in dramatically increased costs; a trend which is unlikely to change.

The consistent increases in energy costs, have created a requirement for energy conservation in new construction.

The above factors have created an opportunity for LZC to become an effective alternative to traditional systems by focusing on the production of high quality, value added materials for market niches.

THE CHALLENGE

Successful introduction of LZC will have to overcome the inhibiting factors of:

1. A facility for the production of LZC in commercial quantities.
2. Acquiring the necessary construction and inspection code approvals.
3. The consumer must be educated on the advantages of LZC systems and request its use. The consumer of today is more demanding, more sophisticated and smarter than ever about their options. They want better value and they have the muscle to insist on it.
4. Whereas building tradition is changing, the industry is highly fragmented with decision makers from architects, builders, developers, contractors, construction managers, unions and suppliers, all of whom must be educated to the opportunities of utilizing LZC.
5. LZC must meet the consumers' demands by satisfying the underlying requirement for a cost effective system.

THE STRATEGY

The strategy is to establish initial market share by concentrating on niche market products. This introduction stage commits all the key functions of research, development, engineering and production to the establishment of early adopters of LZC in the niche markets.

LZC is a differential product. A differential product is a product which can replace other products in the marketplace. In this instance LZC can replace both concrete and wood products. The potential customers must be shown a sufficient differential advantage to motivate the shift to LZC.

The strategy for LZC introduction, utilizing the differential advantage, will be adjusted into a developing strategy for the growth stage of LZC, beyond the niche markets. The strategy will continue to adjust and change as LZC reaches a maturity stage. It is important to recognize that the strategy must be flexible, adapting to the acceptance time for a differential product.

LZC is a high technology product. One of the key strategic implications is to be first in the marketplace and to be fast. Efficiency and economic production are important.

THE TACTICS

The tactic for the development of LZC is to overcome the challenges to fulfill the strategy.

PPT's tactic to overcome the challenge of initial production of commercial product is to have LZC produced under-license by a pre-cast concrete manufacturer with the required curing equipment. This method will allow PPT to achieve initial commercial production without the initial high capital cost of constructing a plant.

PPT will be able to begin acquiring the necessary construction and inspection code approvals for LZC. Priorities will be established for codes and approvals in the niche markets subsequently leading to additional approvals. Emphasis will be placed on utilization of LZC outside of urban areas to take advantage of faster approvals in the rural and remote industrial and agricultural sites.

The consumer, in the identified niche markets, can be provided with demonstration products from licensed production. All of the engineering properties and durabilities will be elucidated for the potential consumers, as well as the key function of costing. Architects, builders, developers, contractors and suppliers will be introduced to LZC and provided with details on utilization and construction techniques.

It is necessary to note the critical importance of marketing at this stage in the development of LZC. Up to the point of commercial production of LZC from a licensee, all of the financial resources have been allocated to the research and engineering development of LZC. A preponderance of resources must be devoted to the marketing of the product in order to survive the introductory stage, otherwise, the product will fail. Sufficient resources for new product introduction is a must and planning must allocate sufficient financial resources for this.

The introduction of LZC systems is predicated on meeting consumer demands for a cost effective system. Initial production of LZC is planned at pre-cast concrete plants under license. In order to maintain low cost production, variables such as raw material costs for zeolite can be moderated by the location of the ore-cast plant and supply contracts for zeolite. Any zeolite raw material can be adapted with the technology to produce LZC.

A large scale plant dedicated to the production of LZC systems will cost several million dollars. The risk to the capital is too great to consider until market acceptance of the LZC has been demonstrated.

THE MARKETING

LZC is a differential product. Aggressive marketing of LZC products is acute to the success of the product and project. Significant missionary work introducing LZC to the consumer is going to be necessary. The LZC marketing plan allocates significant resources in money and personnel to achieve the goal of sustainable production.

The initial focus of the marketing effort will be to the niche markets with general market introductions of LZC made to potential customers. This initial introduction will be used to involve the potential customers in the development of LZC. The potential customers can provide valuable linkages in the development strategies. The object is to not only respond to the potential customers' expressed needs but to anticipate and supply their future needs.

LZC as a differential product requires elucidation of its advantages from a technical and engineering basis. Technical data sheets, physical demonstrations and price lists will be provided to potential consumers, as they form the cornerstones of the decision to purchase. No sales efforts can proceed until the two key questions can be answered and they are "How much will it cost?" and "When can you deliver?".

Product awareness is the result of an effective marketing program. The methods of creating awareness must produce an image for the consumer that the product is an alternative that they need. Acquiring the answer to that need provides satisfaction to the consumer: For example, if they live beside an airport and don't like noise, LZC acoustical panels will mitigate the noise.

The engineering properties and durabilities of LZC will be presented to the consumers as solutions to their needs for lightweight, strength, high R factors, sound attenuation, fire proof, dimensionally accurate, machineable building materials. A campaign of product awareness will utilize the format of trade shows and conferences. Technical papers will be published in trade journals.

The above methods are a normal approach to industrial marketing. Marketing of LZC must go beyond the conventional approach and create markets. The product has a very broad scope of uses which can be utilized in a myriad of new and replacement applications. In order to promote the LZC into these areas it is necessary to involve active participation by individuals in developing applications for LZC.

A more esoteric product awareness program is aimed at artists. LZC is machineable, it can be cut with a saw, drilled, etc. The plan is to sponsor a sculptors' competition with cash prizes for the winners. The competition will be adjudicated by the art colleges. Along the same lines, we plan to hold a design competition with cash awards for designers and architects for innovative and creative uses of LZC.

I have deliberately used the word "cash prizes" to emphasize the critical point that new or alternative product introduction requires a substantial investment in time and money in order to succeed.

The mass marketing media techniques of newspapers, television and radio will not be employed, except for special features i.e. who won the cash and why. The marketing plan for LZC targets specific consumers with specific messages and tailored products and promotion.

In the final analysis, regardless of any course of action, whether that be the adaption of the science and technology, public opinion or market research and development, only results matter.