

Turning Unwanted By-Products into Synthetic Aggregate

PILDYSH

TECHNOLOGIES INC.

Realizing the Full
Potential of Resources

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The development of the patented *Terra-Bond™* process for conversion of wastes and by-products into synthetic aggregates was initiated by Pildysh Technologies in response to a recognized market need for solutions to the large quantities of fine mineral by-products produced by various industries. An example of these by-products is produced sand – a byproduct of extraction of hydrocarbons from oil sands, with high levels of leachate chlorides. No economically satisfactory method had been found to utilize this by-product, short of containment and storage.



Pildysh Technologies began the internal development process by completing a state-of-the-art search to evaluate the current state of affairs, current technologies and success factors. Samples of produced sand were acquired, and intensive research and development took place in the Calgary, Alberta laboratory facility. The solution for the problem seemed to be utilization as a synthetic aggregate, but an ideal encapsulating agent proved difficult to find. As a result, Pildysh Technologies developed a new, proprietary, sulphur-based binding agent that met the requirements of aggregate formulation, and actually improved the produced materials.



Extensive research and testing was completed to ensure that the encapsulated waste met all federal, provincial and municipal regulations, and would remain stable through future life. In fact, the product far exceeded the requirements, proving the stability of the material. After laboratory bench-scale proving, a commercial project was identified with produced sand that had been stockpiled. Pildysh Technologies designed and built a commercial-scale plant for the pilot project, and converted

20,000 tonnes of sand into synthetic aggregate, used, in turn, in an asphalt mix, and successfully paved 20 km of public roads in Northern Alberta. Regular product testing and quality control was an integral part of the project, to ensure that the process exceeded regulations and met internal design criteria. Subsequent testing confirmed the material's excellent performance under heavy traffic conditions, extreme winter weather and spring "break-up".

Since this pilot project, *Terra-Bond™* has been optimized and further developed, and can now be utilized with almost any mineral-based or sludge-based waste. Commercial-scale *TerraBond™* plants are available for purchase and licensed operation, and are custom-designed for your specific material requirements.

Please contact Pildysh Technologies for more information on how *TerraBond™* technology can help solve your problems of disposal of unwanted materials.



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