



Roche Manufacturing Ltd.

Company	Industry	Contact
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Company Activities

Roche Manufacturing was established in October 1988. The company has operated from Claregalway since 1991 and its main business is the production of heavy machinery with a range of applications including agriculture and construction. Roche Manufacture has a reputation for innovative design and manufacturing. In 1993 the company was granted the Bank of Ireland Environmental Award for designing the round- bale wrapper, which is used for wrapping baled silage. Roche has also produced a range of pole handling equipment used in line construction by electricity supply and telephone companies. The company is now recognised as a world leader in the manufacture of such equipment.

Since 1996 the company has changed its focuses from agriculture to construction machinery with the introduction of a new product range of machinery for the production of hollow-core concrete flooring.

Roche products are marketed and sold all over the world. The concrete machinery product range has been successfully sold all over Ireland and UK and has been supplied as far away as Malaysia. The pole handling equipment is now being actively sold in Ireland, UK, South Africa, and North America.

The design and production of the hollow core concrete crusher is a natural development therefore for Roche Manufacturing.



Hollow Core Concrete Crusher for Recovery of Construction and Demolition Waste

A technology that diverts construction and demolition waste from landfill to recycling its component materials has great environmental significance. Currently all such waste is disposed to quarries or landfill with resultant environmental and economic costs and health and safety implications.

Hollow core concrete is particularly difficult to handle and dispose of due to high tensile steel strands embedded in the concrete. However no technology exists in Ireland that can effectively recover the component materials. Currently technology is available in certain EU

member states that can crush the concrete, however, as the project demonstrated, that technology is inefficient and costly.

Waste hollow core concrete arises in two ways, as production waste and from demolition. Recovery and recycling of the concrete and steel requires integration of several technologies that will produce high-grade reusable concrete and steel strands that are recyclable by traditional means.



Project Consultants

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The objective of this project was to design a crusher that combined the necessary technologies that would produce separation of concrete and steel from hollow core concrete safely, efficiently and cost effectively. In addition to the crusher being designed, the environmental benefits of the use of the crusher were evaluated and the economic feasibility of the crusher established.

Environmental Benefits

The environmental benefits are several fold. First, recovery and recycling concrete for reuse in hollow core reduces the burden on natural

resources. Second, diverting hollow core concrete from landfill or quarries reduces the impact on land and water. The two case studies carried out as part of this project showed that the use of the crusher for production waste recycling only would result in 623,280 tonnes of hollow core concrete being diverted from landfill on an annual basis, which equates to a cost saving of approx. £32 million for Irish producers. A final environmental benefit of having crushers at the concrete production site is that the waste concrete is processed and reused on site, greatly reducing the need for materials transport and the associated environmental impacts.

Commercial benefits

Commercially it is clear from Roche’s perspective that the production of the crusher is commercially viable having a robust market in Ireland due to the buoyant construction business. There is potential also to export the crusher to EU member states and the USA.

From the perspective of concrete producers, the case studies clearly demonstrate that the purchase of the crusher by concrete producers is economically viable with payback periods that range from 4.06 to 5.75 months. The calculation took the factors that contribute to the total cost of waste into consideration namely, the cost of the virgin concrete, the costs of handling and disposal.

Conclusion

This project is timely in that it will contribute towards assisting the aggregates and construction industries achieve the stringent targets set out by national government and assist also in the achievement of many of the objectives set out in the Irish Concrete Federation (ICF) Environmental Code.

