

BYBLOCK

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INFORMATION ON THE ECO-INNOVATIVE SOLUTION PROVIDER

ByFusion® is an innovative manufacturing company committed to disrupting the recycling industry by reshaping the future of plastics. We are committed to help clean up the planet as well as enable communities to keep pace with increased housing and infrastructure demands, in an effort to better the lives of the people inhabiting those communities.

We have positioned ourselves as a platform to ignite the change necessary to help governments, corporations and waste management companies join forces to solve some of today's biggest challenges, including:

- Affordable housing;
- Job creation and, the increased shortage of labor resources in the construction sector;
- Crumbling infrastructure;
- Stress on our landfills (which ByFusion considers critical infrastructure); and
- Environmental preservation.

SHORT DESCRIPTION OF THE ECO-INNOVATIVE SOLUTION

A public benefit corporation, certified B Corporation, member of 1% for the Planet, 2016 Waste Dive's 'Most Disruptive Innovation of the Year' Award, 2015 Winner of the Cleantech Open Northeast Sustainability Award and an essential cog in the wheel of circular economy, ByFusion has a patented process that converts all types of waste plastic into an advanced building material called ByBlock™ that enables communities, corporations, and governments to realize a cleaner world while creating jobs, improving infrastructure, and revitalizing neighbourhoods everywhere.

INDUSTRIAL SECTOR – MARKET SEGMENT AND ACTUAL APPLICATIONS IN INDUSTRY

C22.2 - Manufacture of plastics products

C28.9 - Manufacture of other special-purpose machinery

INDUSTRIAL CLASSIFICATION - NACE CODE

C22 - Manufacture of rubber and plastic products

C28 - Manufacture of machinery and equipment n.e.c.

E39 - Remediation activities and other waste management services

1. DESCRIPTION OF ECO-INNOVATIVE SOLUTION

Technical aspects of the eco-innovative solution

BLOCKER: The ByFusion Blocker is a proprietary platform that upcycles all types of scrap plastic using only a steam-based compression process that does not melt or degrade the polymers. Unlike the traditional plastic recycling process, which requires a single plastic type (typically PETEs or HDPEs) and reduces polymers to flakes or pellets before melting, the ByFusion process limits the heating of the plastic feedstock under controlled conditions, bringing it to the point of, what we call, thermal reset. The ByFusion Blocker is built to be modular, customizable, and mobile – allowing us to take it to wherever plastic is. We can right-size the machine to suite the plastic problem or operation (based on tonnage per day and the water/energy availability of the region).

BYBLOCK: ByBlocks are stable, 100% recycled; offering the perfect alternative to precast and pre-fabricated concrete. Although the size and dimensions of the blocks have been standardized to replicate the most common form of block used in general construction today, it is possible to easily produce different shapes and products on a single manufacturing line making the weight, shape, size, and permeability of the bricks infinitely customizable for a wide variety of uses and to meet new market demand.

The Specs:

Size	16" x 8" x 8" / 398mm x 190mm x 190mm *comparable to common hollow cinder block
Standard Weight	22lbs / 10kg (standard weight) *can be made between 7 – 12kg to fit the need of the application

Economic and environmental benefits of the eco-innovative solution

Plastic has become one of the world's greatest environmental and economic challenges. Today, humans spend over \$120B to create over 311M tons of plastic waste every year and only 8% of plastic gets recycled. The other 92% is either landfilled (clogging up communities' critical infrastructure), incinerated (contributing to greenhouse gas emissions) or, leaked into our streets, waterways, and oceans (disrupting our fragile ecosystems). Although many industrialized municipalities collect a wide variety of mixed plastic, only two types – polyethylene terephthalate and high-density polyethylene– are routinely recycled, yet are only marginally profitable. Types all other plastics are typically landfilled, incinerated or pollute our oceans and waterways, because their value is degraded through what secondary markets consider "contamination" from inks, labels, and other additives that make sorting, cleaning, and re-processing too expensive.

Despite the technological advances over recent years in the reclamation of plastics, a large portion of the plastic waste stream cannot be mechanically recycled due to contamination, lack of markets, or an inability to economically separate plastic types. The ByFusion Blocker offers a solution to this problem.

2. AVAILABILITY OF THE ECO-INNOVATIVE SOLUTION AND BUSINESS PARTNERSHIP

Market readiness, Trade mark, existing market coverage, commercialization strategy

Our production machine is installed in New Zealand and several structures have been built with ByBlock in that area of the world. Machine production has begun to meet the demand in North American, Oceanian, and European markets. We are targeting first installation in Q1 2019.

ByBlock are scheduled to hit the US market in Q3 2018. Patents and trademarks are complete.

Requirements to adapt the solution to the local market and potential applications/market size

ByBlocks should be certified following national building standards.

On site-after-sales services support and the technical assistance requirements

Technical support is provided from New Zealand with services expanding.

Targeted local business partners

Waste management companies, recycling facilities, governments, construction industry.

Type of local business partnership sought

Licensing

The SwitchMed Program is funded by the European Union and implemented by the United Nations Industrial Development Organization (UNIDO) in cooperation with UN Environment Mediterranean Action Plan (UN Environment/MAP), the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC), and the UN Environment Economy Division.



Regional Activity Centre
for Sustainable Consumption
and Production

SwitchMed Programme
is funded by the European Union

