



Waste Management



Landfill or Goldmine?

Waste Dilemma

- It releases harmful chemicals into the soil and water when dumped, or into the air when burned.
- Getting rid of it has become a huge global business.
- Wealthy countries spend some \$ 120 billion a year disposing of their municipal waste and another \$ 150 billion on industrial waste.
- Plastic waste in particular, does great harm to marine life. The damage is not only to the environment but to fisheries and tourism too.
- Every kilometer of the ocean 13000 pieces of plastic floating in it.
- The floating portion makes up just 15% of “marine litter”, another 15% washes up on the shore and 70% ends up on the seabed.

The Problem with Landfills

- To find enough space for it
- To avoid environmental damages.
- To find friendly and not so hostile locals with health concern
- To avoid methane gas generated in sites and hence explosion and/or fire
- To reduce green house gas methane which is 21 times greater potent than carbon dioxide
- To avoid ammonia in concentration to prevent poisoning of fish and amphibians as well as ultimately rendering water undrinkable
- To prevent bacteria break down rotting waste causing acids with change of water compositions in landfills.
- To stop dissolving hazardous materials such as lead and cadmium at presence of such acids
- To stop water leaching through landfills causing toxins agents entering ground water.

The Problem with Landfills

- Almost all landfills are facing the “leachate” problem i.e. preventing any contaminated water from leaking out.
- A system of ditches and drains collect all the leachate, which is pumped through treatment plant.
- Collect and control the methane gas emitted by the landfill.
- Air quality, dust, litter, odors and vermin are to be strictly controlled
- Above procedures require investment to ensure that the leachate continues to be treated, the gas collected, the local environment monitored and any damage remedied.
- Such investment easily reach about \$ 50 per ton of the waste. Considering the volume of about 10 000 tons a day for an average city’s waste in a densely populated area, the investment would be sky rocketing.
- Burning, in many countries are prohibited or restricted due to pollution issues.

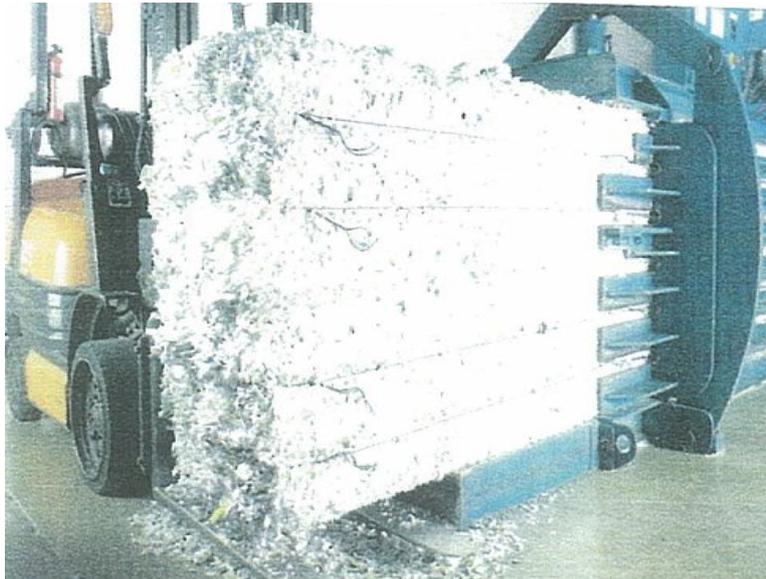
The Recycling Solutions

Waste presents an opportunity in a grander sense, as a potential resource. Recycling is known as the process of recovering scrap or waste and reprocess the material into useful products, sometimes completely different in form from their original state.

Diverting waste to recycling is a lot cheaper than having it hauled to the dump.

Two types of recycling purposes exist:

1. Post-Industrial: Scrap in the production process
2. Post-consumer: Waste



Plastic Recycling

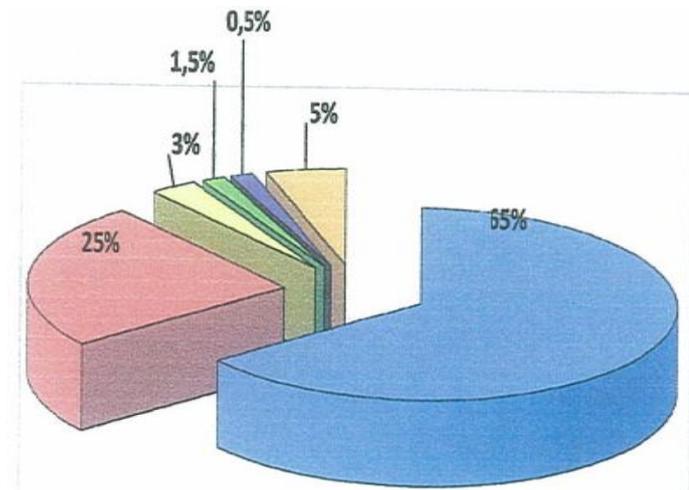
- Plastic wastes have become so prevalent that they are well on the way to turning earth into “one vast dumpsite”.
- The recycling of plastic packaging is one way that can significantly reduce the negative environmental impact of their disposal on our planet
- Biodegradable plastic bags in landfills breakdown into bits of toxic pollutants, which contaminate the soil and posing a serious threat to marine life.
- Packaging is such a significant source of solid waste
- Collection of waste material is exclusively in the hands of the municipalities.
- Municipalities sort & recycled the collected waste in specialized centres.



Waste Project

Typical mixture of multi solid waste materials (heterogeneous) is:

- 65% Glass
- 25% Plastic
- 5% waste not from packaging
- 3% steel
- 1.5% Aluminum
- 0.5% Tetra pack



Plastic is the second most prevailing material in a solid waste mix

Waste Project

The next step in the process is the separation of glass, steel and aluminum using magnets and eddy currents.

The lighter materials (plastic, Tetra Pack, etc...) require another process of separation.

PET materials are separated from Tetra pack. Therefore from a batch of waste following materials are obtained:

65% glass

3% Steel

1.5% Aluminum

0.5% Tetra Pack

12.5%

Bottle in PE
PET coloured
PET transplant
PET blue

10% Not selected PE (Mix)

2.5% Remaining

Mix Material

MIX (disposable polyethylene) materials are usually sent to burning heaters or incinerators with a very low energy yield.

Mix mainly includes polyethylene, but upon closer examination it typically contains:

- 75% PE (high & low density)

- 10% Other plastics (film)

- 15% Other materials (paper, steel, wood, fabrics, etc...)

The MIX is not usable as it is and must undergo a separate process to recycle and transform it into a finished product with interesting mechanical characteristics.

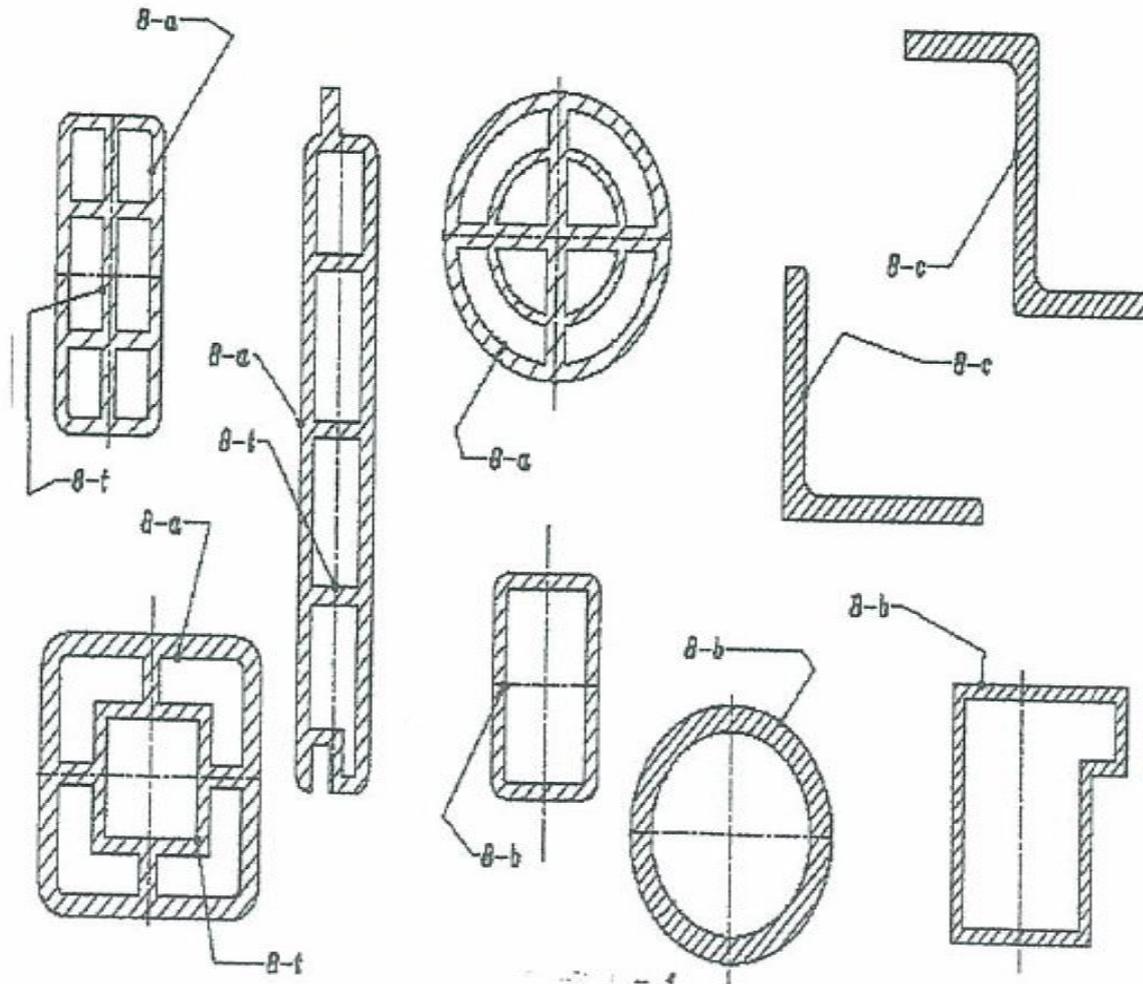
Line for Recycling Mix

- Main grinder: Obtain materials with fixed and checked dimensions for further processing
- Non plastic parts (aluminum, steel, etc...) are separated from the plastics
- Densifier: grinded & cleaned plastic materials are sent to densifier for compacting the plastic at temperatures of 200-220 °C
- Densified material is then sent to grinders to create granules with sizes 5-7 mm
- Transformation of densified material into a finished product through extrusion process.
- Extruded profiles can be produced with different colours by adding coloured master batches.

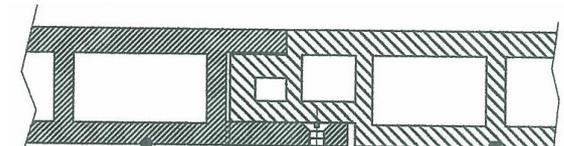
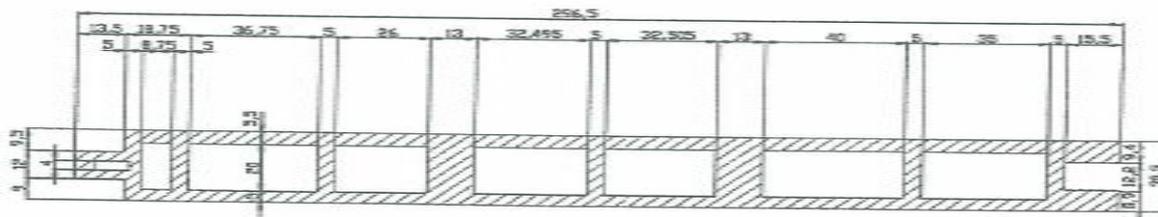
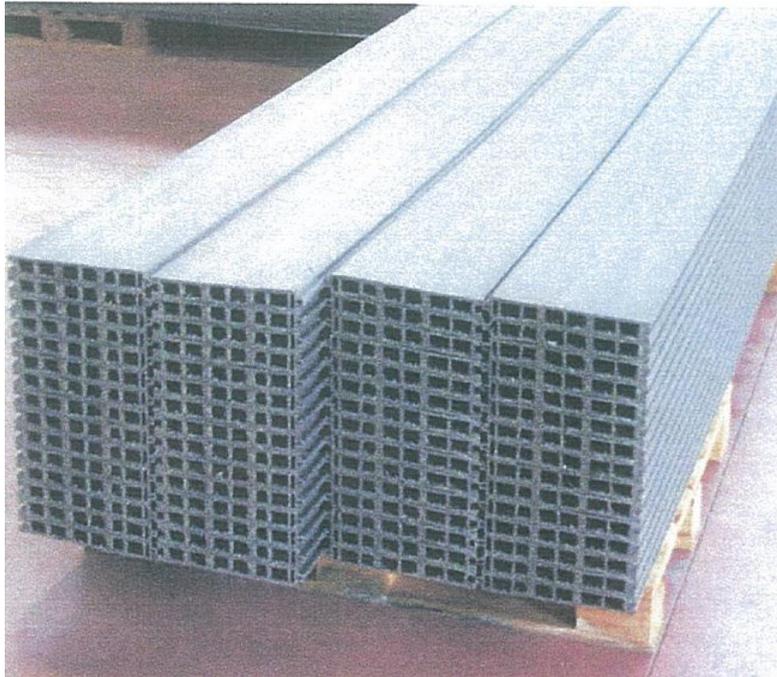
Typical Products

Typical cross sections of profiles that can easily be designed like: square, rectangular, circular sections

These extruded profiles can very conveniently substitute wood, metal and virgin plastic profiles



Products



Flooring of trailers
Hollow design permits the cable run

Products



Transportation Pallets

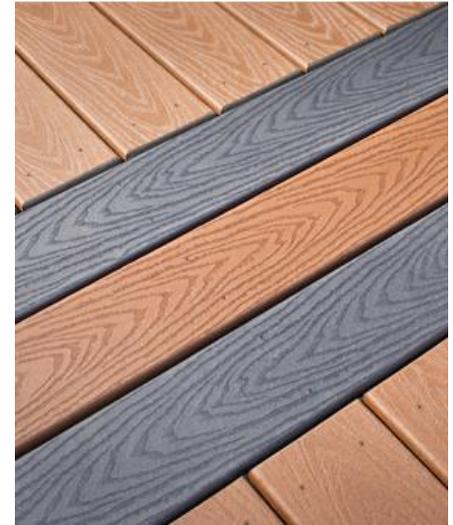
Products



Bench for Parks



Products



Deck Flooring

Products

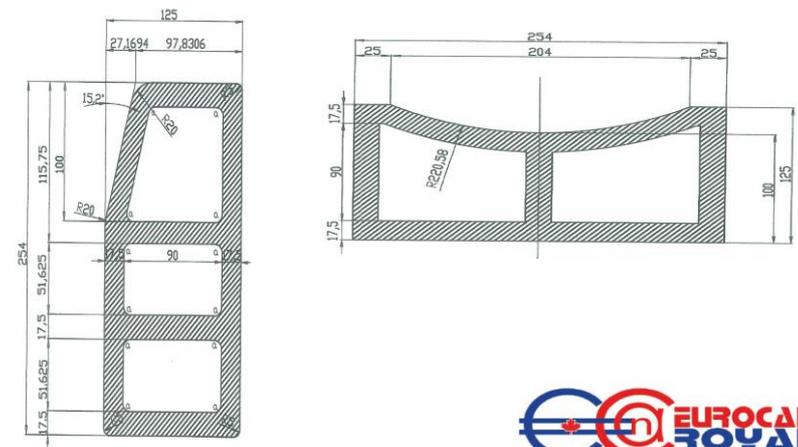


City Curb

Products

Curbs produced from Mix materials have same mechanical properties of concrete curbs. Main advantages of plastic curbs:

- Lighter than concrete, easy to handle
- Hollow construction permits passage for utility pipe/cable and irrigation system
- Installation/removal is easier than concrete curbs
- No need to paint. Curbs can be supplied in different colours to match city requirements
- Can be supplied in different shapes to suit city curb design



City Curb

Our Vision

Our challenge at EUROCAN ROYAL is to provide an environment in which the points made by all our potential clients are explored and given the chance to flourish with our help and encouragement.

Our vision is to make a unique and significant contribution to innovative clients too, who are also eager to develop and stand behind this idea and technology, but have other products in mind to suit their own purposes.