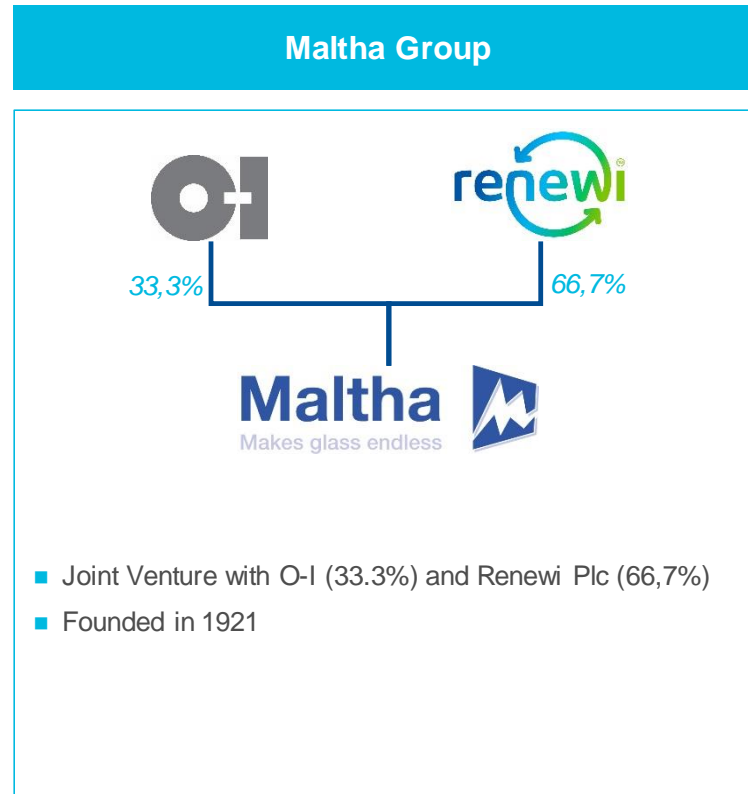


Maltha

Makes glass endless



Maltha Group, company introduction



Maltha is the leading European glass recycling company

Key operational figures (2018)

Revenues: € 55 m

EBITDA: € 8 m

Locations: 8

Employees: 200

Customers: ~ 20

Tonnes processed: > 1,300,000

Current geographical footprint



 Largest recycler of packaging and sheet glass in Europe



Glass – A proof of a circular economy!



- Endlessly circular without loss of quality
- Beerbottle > 80% cullet = 25% less energy
- 1 ton glass cullet = 670 kg CO₂
- 1 ton glass cullet = 1.2 ton raw material (sand, soda ash, ...)

From Waste to Raw Material



“End of waste” - status



CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

Maltha Glassrecycling Nederland
Glasweg 7-9
4794 TB Heijningen
The Netherlands

has been approved by Lloyd's Register Quality Assurance to the following requirements:

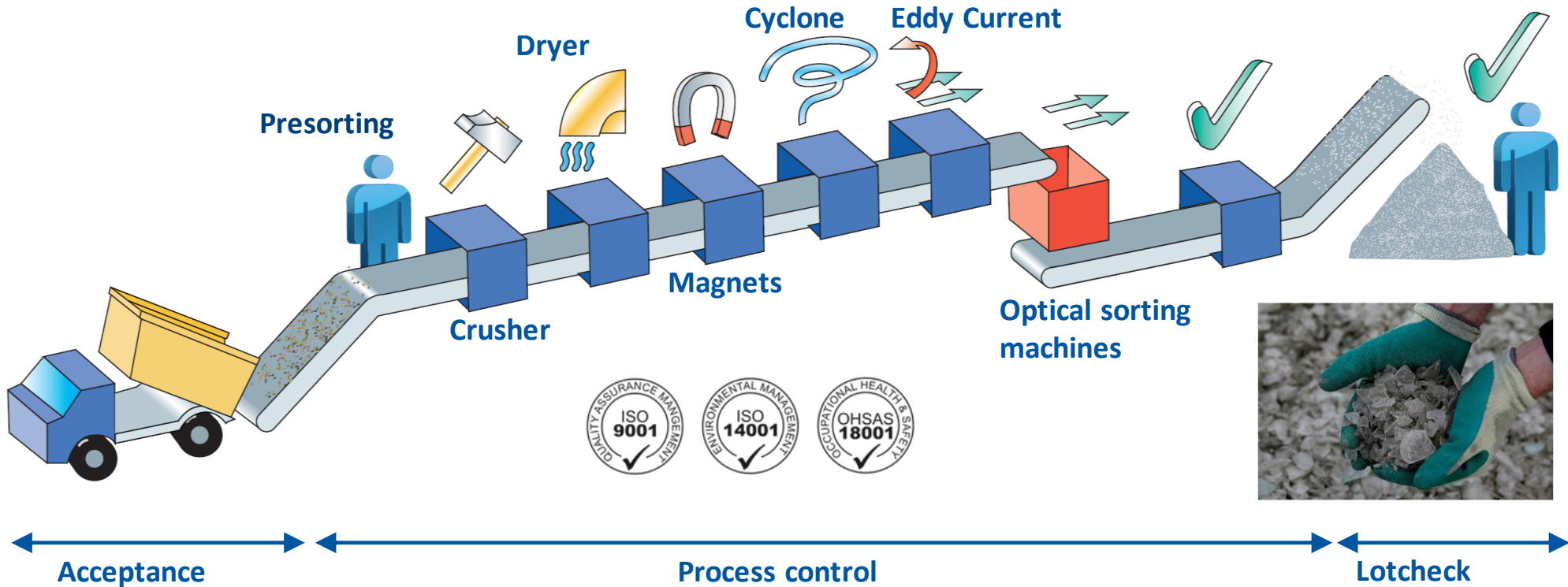
Commission Regulation (EU) No 1179/2012 of 10 December 2012

Establishing criteria determining when glass cullet ceases to be waste under Directive 2008/98/EC of the European Parliament and of the council

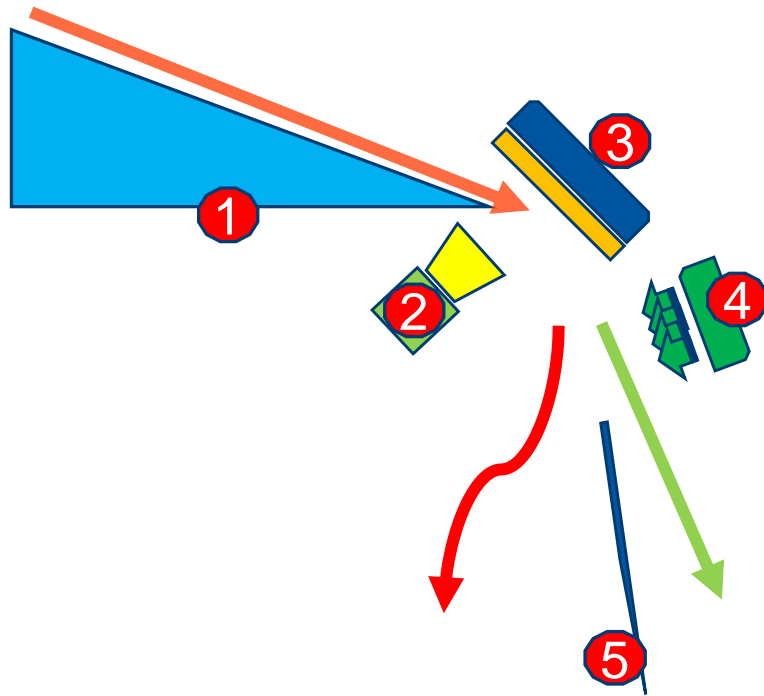
The audit (based on sampling) of **Maltha Glassrecycling Nederland** done on 14 October 2014 showed no deviation of the requirements of the European Regulation 1179/2012 establishing criteria, mentioned in Article 5, determining when glass cullet ceases to be waste.



Production Process

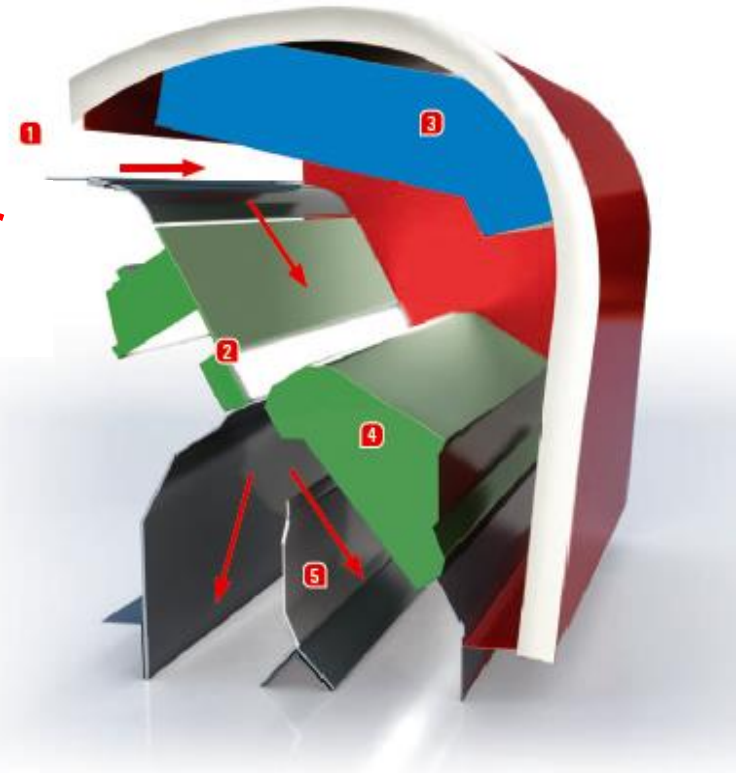


Production Process – Optical sorting



Optical Sorter

- 2 Light source
- 3 Camera unit
- 4 Ejection unit
- 5 Divider plate



Dintelmond (Netherlands)

- Situated at deep water with own quay
- Rebuilt in 2015 including the powderline
- Both container glass as powder production
- 350 Kton production capacity, 45 ft
- Specialized in low grade input processing, MRF glass from UK.
- High yield and premium product quality



- **Sorting of cullet > 3mm instead of > 8 mm**
- **10% more cullet available**
- **Higher quality**
- **Alternative glass streams: MRF-glass from the UK**
- **Fraction < 3 mm => powder => packagingglass production**

**Commingled
Recycling**



clean paper & cardboard



glass bottles & jars



plastic bottles & jugs

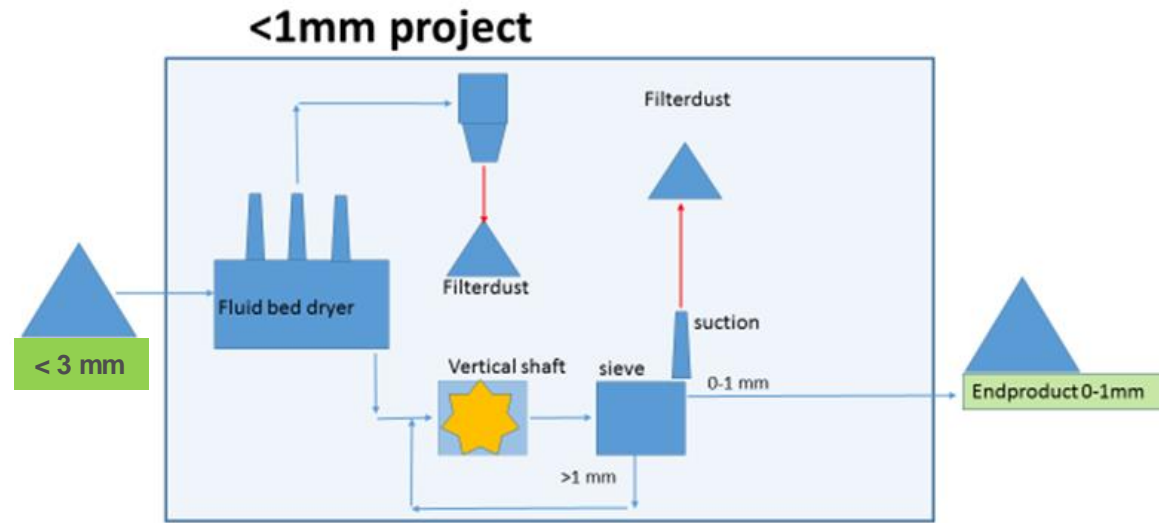
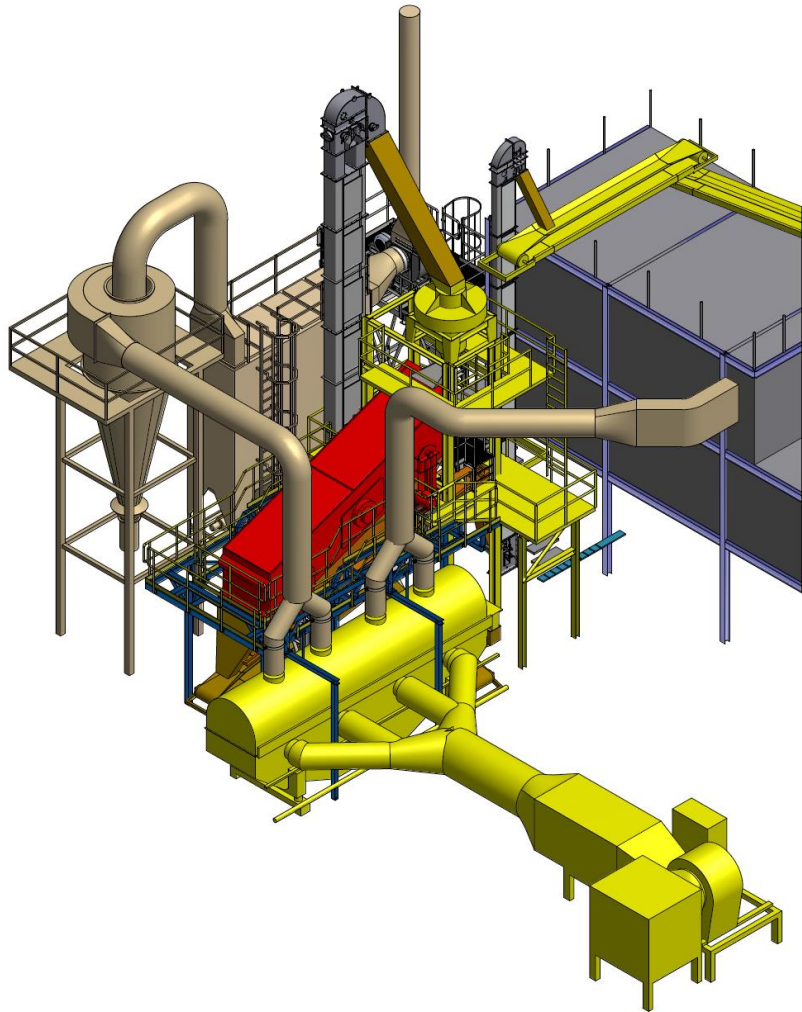


cans

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Powderline

Significant improvement of yield & quality



Recycling – % bottleglass

100% ingezameld flessenglas levert:			Toepassing
Glasscherven	73,5%		Nieuw verpakkingsglas
Glaspoeder	11,0%	+	Nieuw verpakkingsglas (of glaswol)
	84,5%		
KSP uitstoot	8,2%		Bouwmaterialen
Fijn glasstof	3,8%		Baksteenindustrie
Metalen	1,0%		Metaalrecycling
Brandbaar afval	1,5%		Energie
Vochtverlies	1,0%		



Recycling – De Wijnfles

- **Kleur van het glas**
 - Niet te donker!
 - Nieuwe sorteertechniek (voor flessenbodems) inmiddels beschikbaar
- **Sluiting**
 - Metaal => goed en eenvoudig te scheiden zonder plastic seal?
 - Kurk => lastig(er) te scheiden, toepassing (nog) beperkt, moet 100% zuiver zijn
 - Kunststof stop => lastig(er) te scheiden, toepassing (nog) beperkt
- **Etiket**
 - Papier
 - Kunststof => aandacht voor de lijm
 - Inkt



Maltha

Makes glass endless

