



40th ASEAN Glass Conference

Dusit Thani Hua Hin Hotel

October 17-20, 2016



INNOVATIVE CONCEPTS FOR QUALITY



Post-consumer recycled glass (external cullet) brings many relevant benefits to the production process (lower melting energy, emissions, furnaces wear)...

but actual maximum percent use in batch is limited by quality (contaminants content, color separation accuracy...).



Cullet treatment plants present a trade-off between quality and yield (input/output ratio), affecting processing and cullet final cost.

The treatment process is based on cleaning steps sequences, each one increasing the quality, but also causing the loss of good material.



Successful plant operation, whatever
it is (as financial results) or inside
mass factories (to be treated as profit center),
depends from three factors:

- Process flow design
- Equipment specifications
- Operational know-how



- Italy has developed over 50 years a sophisticated cullet treatment system.
- Today recycling/produced glass is >90% and treatment plants exceed 90% of ready-to-furnace/input material respecting strict EU regulations.
- Quality of collected material in Italy is probably the worst in the world, but quality requirement by clients are very strict.



Based on Italian experiences, Advantech has developed an innovative cullet treatment concept, teaming with a very successful plant operator.

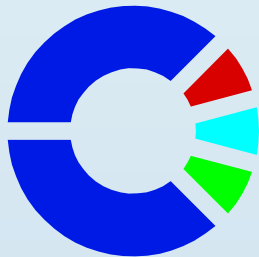
- Intermediate goal:

Ability to process with success different input material, with quality variable by collection type and time (season)

- Final goal:



- We call it



MAC Cullet

GLASS RECYCLING REVOLUTION

- Standard process workflow designed from our experience for high flexibility, quality and yield
- Equipment from third parties selected depending from real, actual performances
- Equipment manufactured by us specially designed from our Partner's experience



Results:

- Many types (grades) of cullet produced
- Color consistency 99,9%
- CSP even lower than 10 ppm
- Lead 0 ppm – HR 0 ppm -
- Yield over 90%
- 0% rejected loads by clients
- Financial profitability



Basic Module - Capacity up to 24 tph

- To start and learn
- One input line with metal separation (mag + ECS), manual selection, suction grinding, sieving.
- From input line, two processing line, for two different, adjustable sizes
- Fine line with metal separation (magnetic + ECS), manual control, suction, from 1 to 4 optical machines



Standard Module - Capacity up to 36 tph

- To process also superfines and very wet material
- Composed by one Basic module + one Superfine line with sieving, dryer with delabeling, metal separation (magnetic + ECS), manual control, suction, from 1 to 4 optical machines
- Bypasses to obtain different processing options and backups

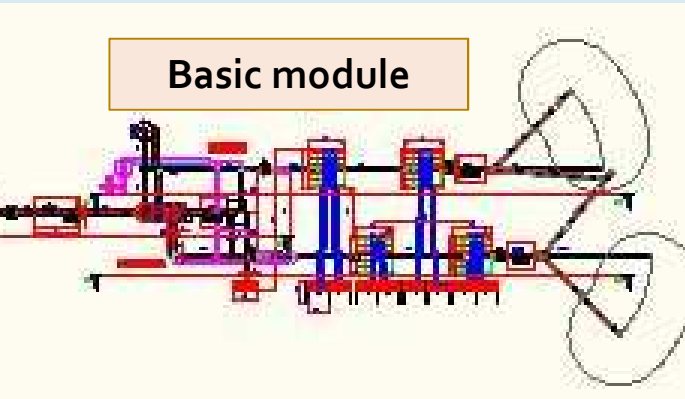


Complete Module - Capacity up to 60 tph

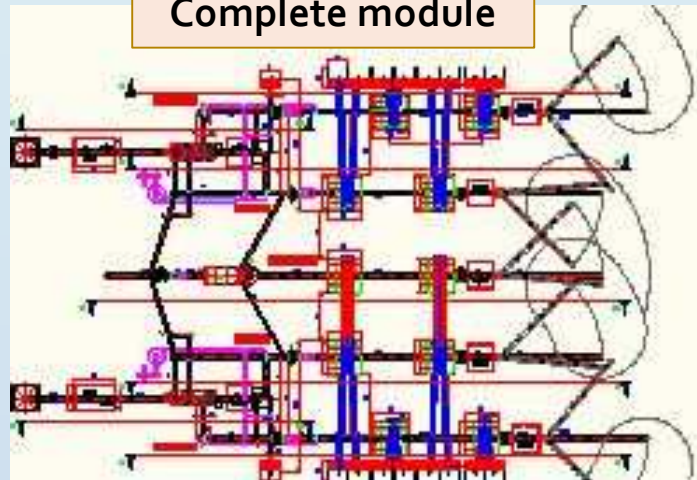
- For higher volumes
- Composed by a one Standard module + one twin Basic module
- Two types of input material processed at time
- Bypasses to obtain different processing options and backups



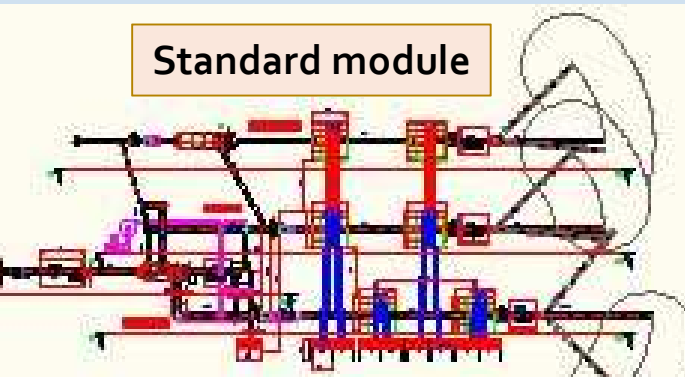
Basic module



Complete module



Standard module





able to process any quality specifications of incoming material (different types and from different separate collection systems) and to accommodate seasonal variations over the year.

ready to accept input's quality (lower) changes in the future. – As a rule, increase in collection level implies sharp decrease of quality of



- There is only what is needed
- There is all with is needed
- Capital investment low and optimized
- Low maintenance
- Low operating expenses
- Easy to manage
- Long useful life – special quality of materials
- Never stops, thanks to high quality and selected



- Operating procedures included
- Including certified quality control procedures acceptable for plant's clients
- Remote management and control optional, with fault supervision and peer benchmarking
- Possibility of Partnerships
- Guarantees on results available

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Thanks for your kind attention ...