V&K Recycling Co.

REDWAVE

GLASS RECYCLING

- Kartik Morar

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Benefits of using more cullet

- → Furnace ready cullet can help you improve quality, reduces rejection, decreases energy and virgin raw material requirements
- → Melting temperature for cullet – 900^{o} C to 950^{o} C
- → Batch from Virgin material requires 1450^{o} C to melt
- → Just a small example, increasing the rate of cullet charging by 10% reduces your energy requirements by approx. 3% and also reduces your virgin raw material requirements by 1.2 times
- → Environmental Impact:
  - → Less energy requirements = Less Carbon Emissions
  - → Save on LandFill

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Why Cullet is a Culprit ?

→ Due to Inclusion of Ceramics, Stone, Porcelain Plastics, metals, Organics, HR glass and Lead glass, High iron containing glass, mirrors, coated glass, laminated glass and different oxides in colour glass gets mixed with the cullet due to 2 primary reasons.

  → Unorganised disposal and its collection system and

  → Examples of Contaminants like Aluminium and Plastic caps used in Container glass and coatings and laminations used in flat glass production

→ You get all this impurities free of cost from cullet suppliers but to you it disrupts your production process and increases cost of production, we are here to assist you in fighting culprit in a most cost effective and reliable way by helping you achieve cullet quality and quantity on a consistent basis.

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The Automated cullet sorting process offered by REDWAVE and V&K have cost effective solution that can help you achieve optimised production at reduced cost.

INPUT MATERIALS

- Material from kerb side collection
- Supplied by Scrap Vendors
- MRF glass material

Glass Treatment and Sorting Process

- REMOVAL OF CONTAMINANTS
- COLOUR SORTING
- SEMI COLOUR AND SPECIALISED SORTING APPLICATIONS

FINAL PRODUCTS

CULLET

- Re-melt in container and flat glass industry
- Other use (construction industry, aggregates, etc.)

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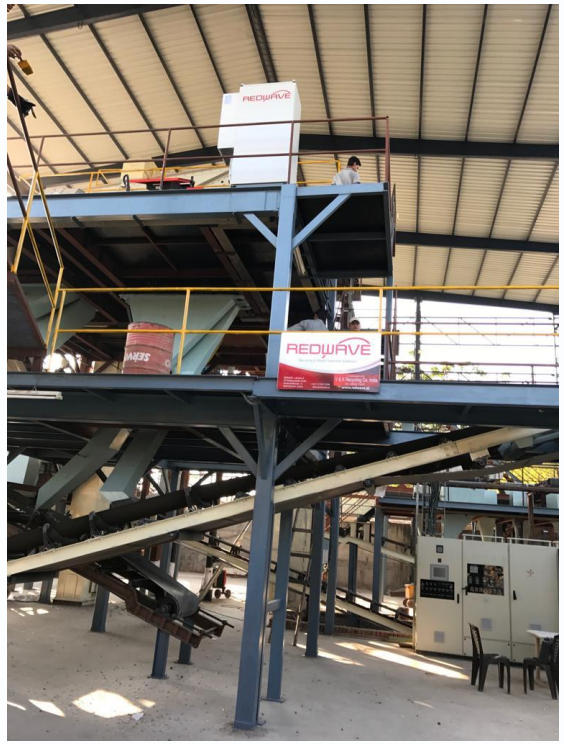
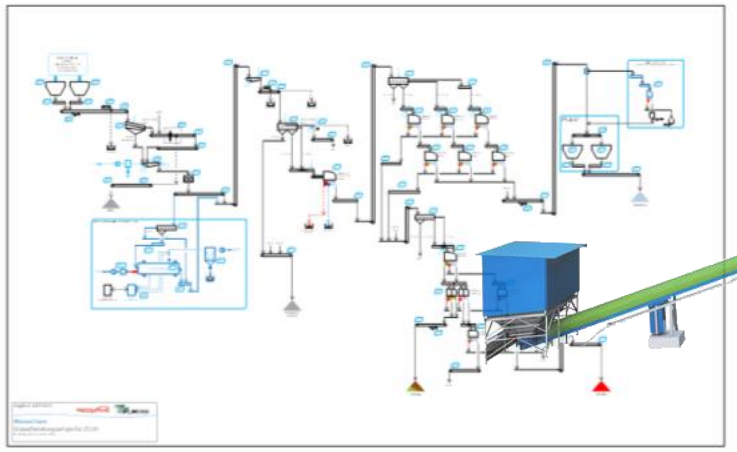
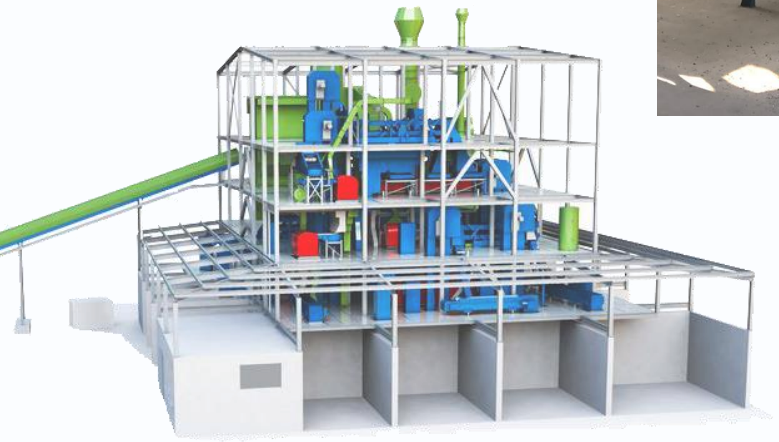
Our Solutions – Simple. Precise. Clear.

- **Process consultancy**
- **Material and process flow diagrams**
- **Plant performance and mass balance calculations**
- **Plant layout design**
- **Supply of equipment**
- **Installation**
- **Commissioning**
- **Local after sales service support**







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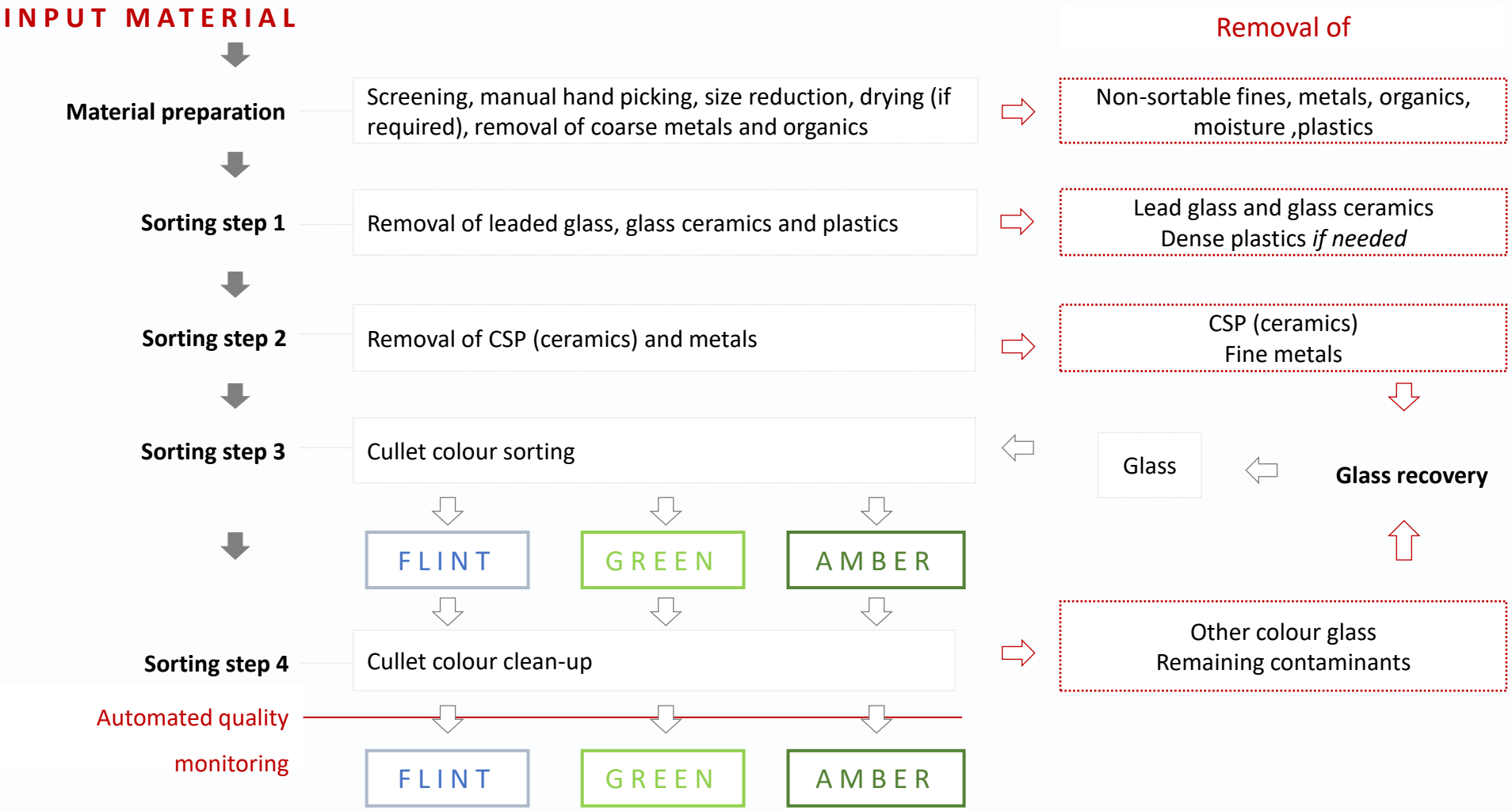
How do we achieve this?



No Washing of Cullet Required

Completely DRY Process

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CULLET QUALITY SPECIFICATION

Defined by content of

KSP or CSP (ceramics, stones, porcelain)	5 - 25 ppm
Ferrous Metals	1 - 5 ppm
Non Ferrous Metals	1 – 5 ppm
Glass-ceramics	not accepted
Lead-glass	200 (100) ppm in batch
Lose organics	300 ppm

Other colours in Flint / Amber / Green can be define according to the input

FLINT

AMBER

GREEN

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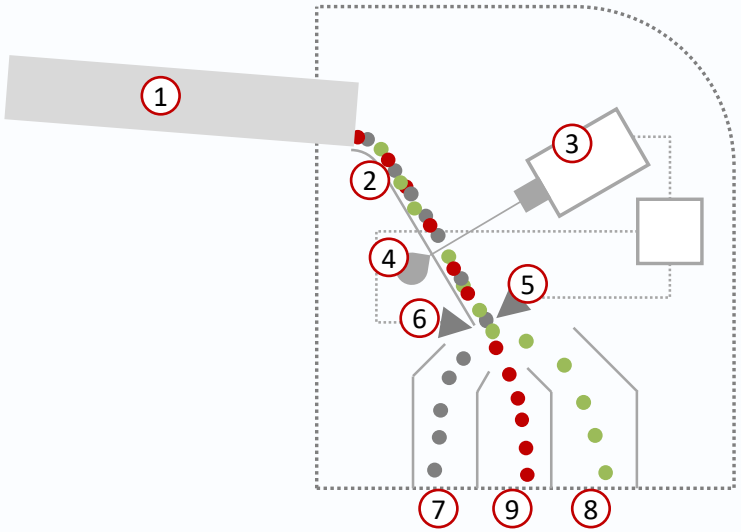
Our Achievers for the Glass Cullet Sorting

REDWAVE CX / REDWAVE CXF



1 Feeder
2 Glass slide
3 Camera box
4 Light source
5 Front valves and nozzles
6 Rear valves and nozzles
7 Eject A (from front)
8 Eject B (from rear)
9 Pass

- High capacity, high quality and high yield sorting
- Modular 2-way or 3-way design
- Reliable and user friendly operation
- Low compressed air consumption
- Two highly efficient sorting steps in one machine

Rated by our Customers , CSP sorting accuracy has been consistently achieved at +99%

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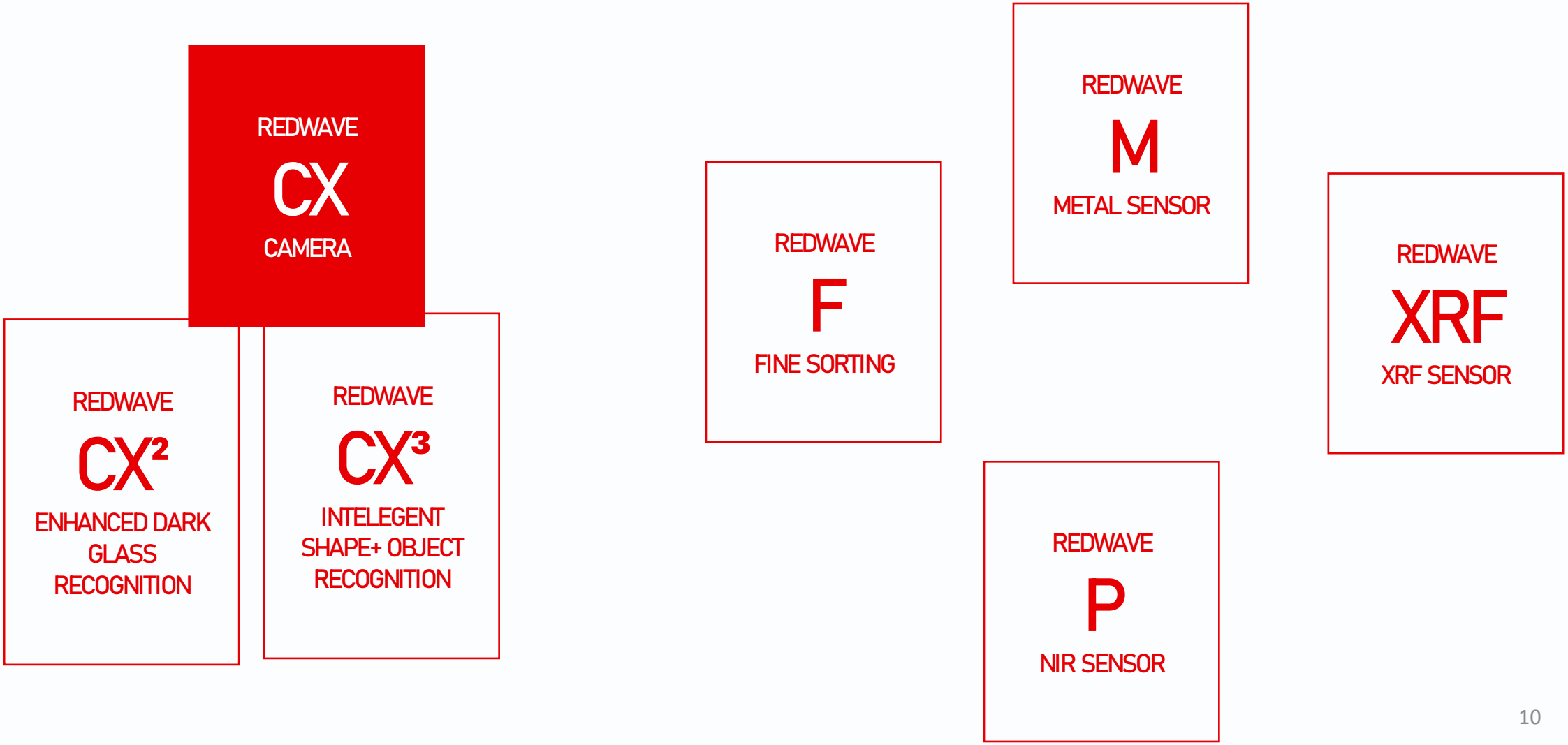
THE WORLD OF SORTING GLASS – ADD. SENSOR CONFIGURATIONS



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Achievements through Innovation

INNVOVATIVE FLINT CULLET SORTING BASED ON Fe CONTENT

→ CX and CXF machine can detect flint cullet in various grades based on the iron content in cullet

→ Example: Sorting of flint in three Fe classes:

0-500ppm, 500-800ppm and >800ppm

→ Numerous machines in operation worldwide

Pioneers

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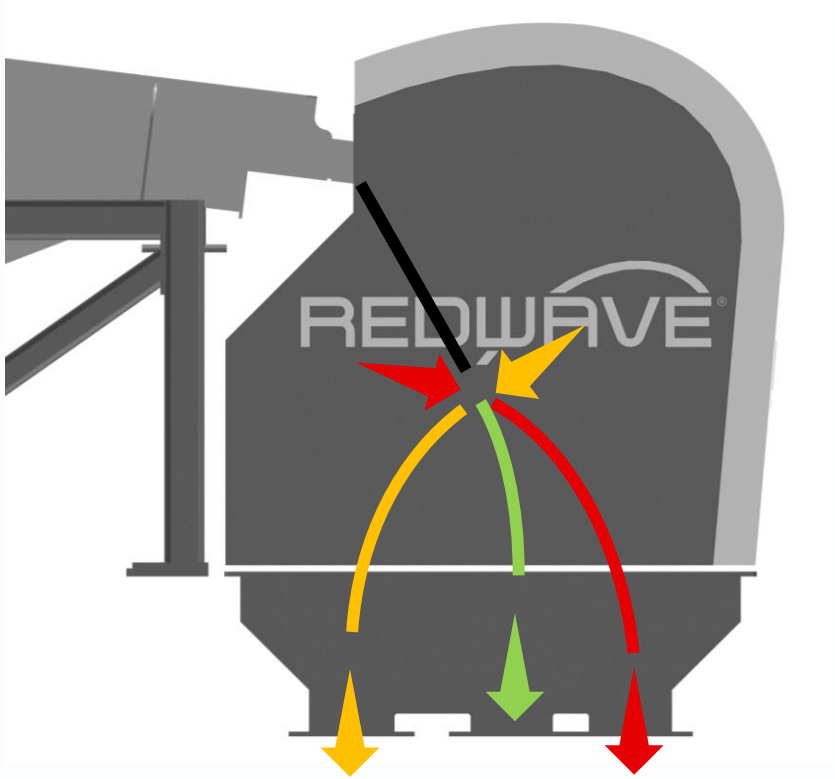

LOW IRON FLINT SORTING

EJECT 1 – off-colour & contaminants

PASS – standard flint glass

EJECT 2 – low-iron flint glass

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It is easier to praise one self but it is not good enough, your technology and services are only as good as your clients references, mentioned here are only of those who are present here today at the event .

GOPAL GLASS WORKS LTD.

2 Cullet sorting plants

SGIPL Sunrise Glass Industries (P) Ltd.

3 Cullet sorting plants

Thank you for your attention!

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Questions are Welcome

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