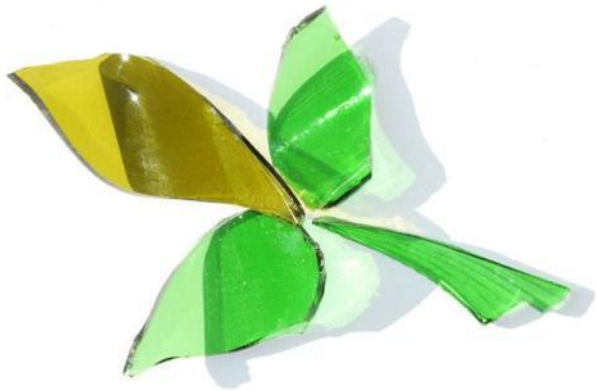
Appropriate methods to avoid metal contamination of glass batch during raw material handling, on the example of a special glass batch plant.

13th March 2015



Content

1. Special requirements of Thin Glass Production
2. Solutions Batch Plant
3. Solutions Cullet return
4. Minimizing of abrasion
5. Material selection
6. Pictures
7. Conclusion

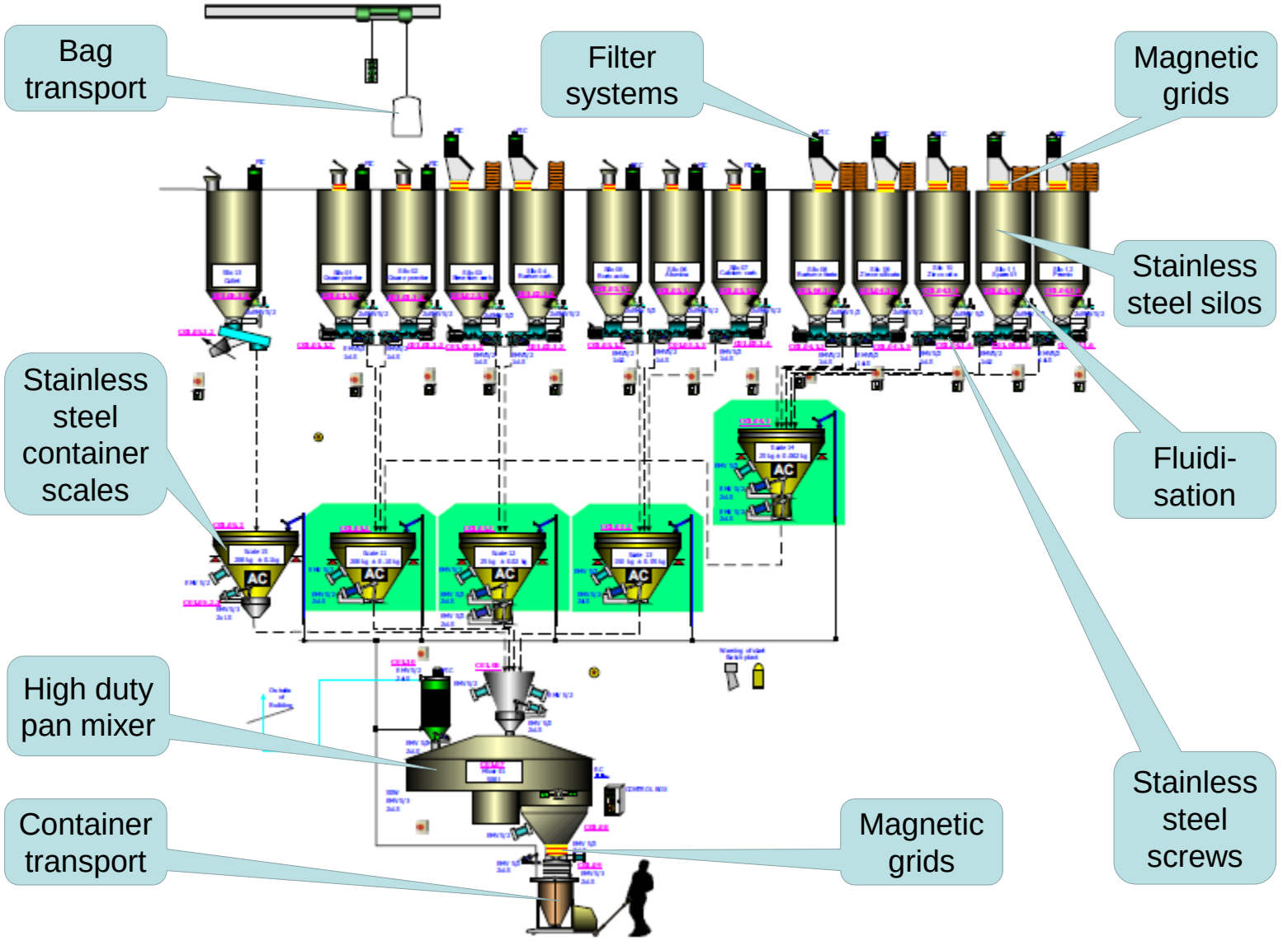
Requirements – General

Production lines for thin glass have special requirements.

- Transport and handling of dry and fine raw materials
- High dosing and weighing accuracy
- High mixing homogeneity
- Minimizing of de-mixing during batch transport
- Special cullet treatment
- Dust prevention
- Minimizing of metal and organic contamination (Avoidance of wear, avoidance of Nickel)

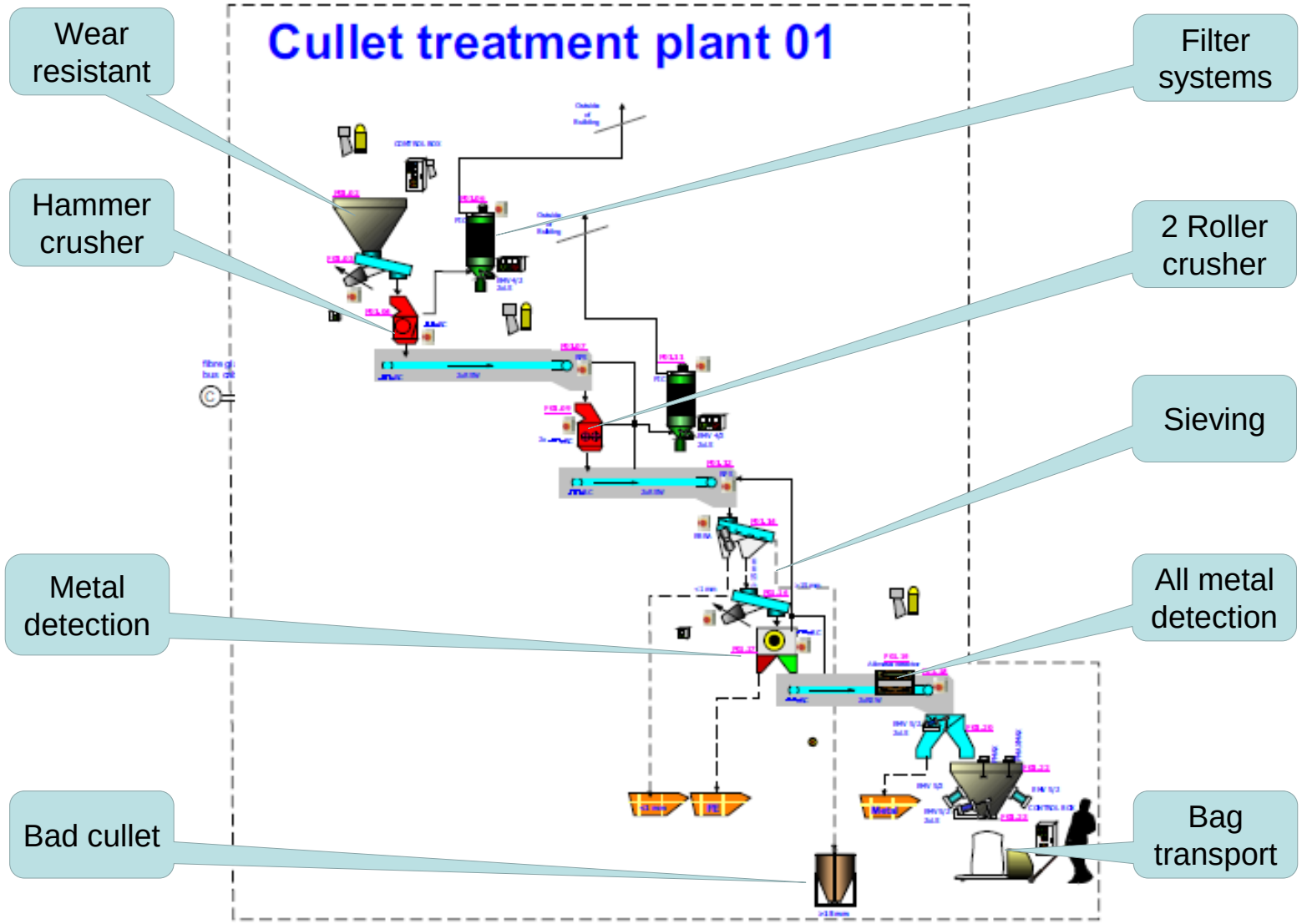
Solutions – Batch Plant

Flow sheet of a possible thin glass batch plant indicating the special solutions for thin glass.



Solutions – Flow Sheet Cullet Return

Flow sheet of a possible thin glass cullet return system.



Minimizing of abrasion

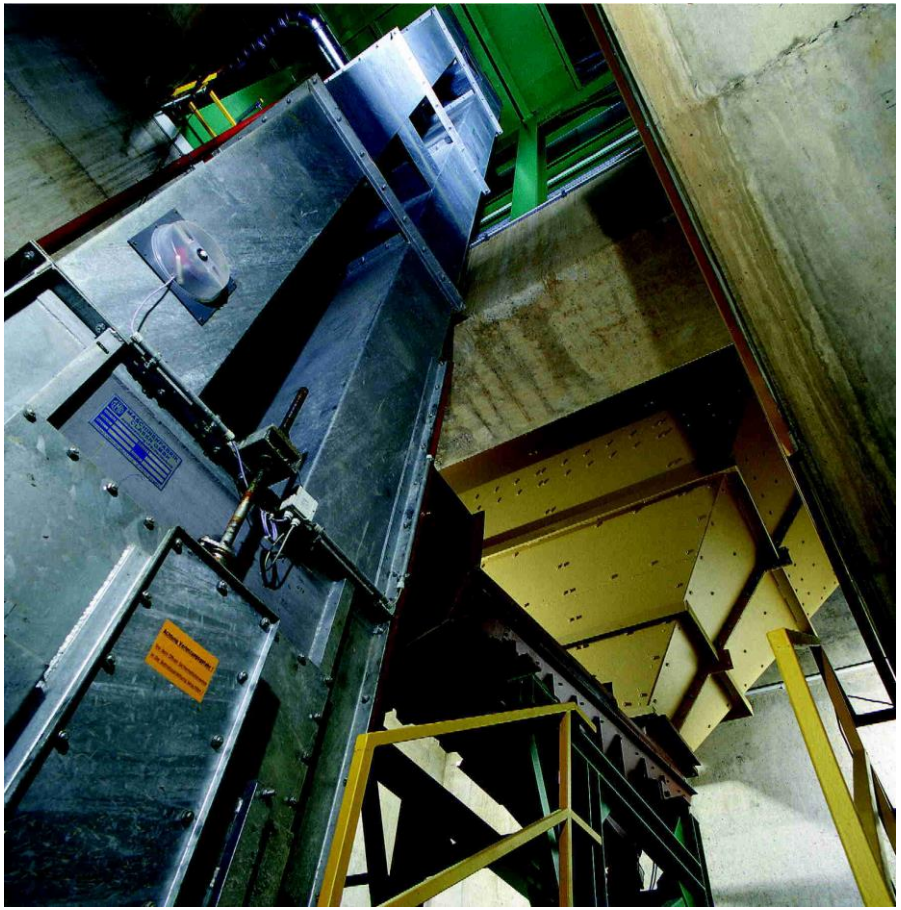
- Wear-preventing design of transfer chutes, closing units and containers.
- Use of proper linings.
- Use of material buffer layer
- Use of high abrasive resistant material for mixing and crushing tools
- Optimized dosing cycle under consideration of the wear resisting properties of the different materials

Material selection

- Stainless steel for silos, container and dosing screws.
- Composite wear plates for high stressed parts.
- Plastic lining (PE) for hopper and transfer chutes
- Hardox 450 for special lining (mixer bottom and walls)
- Cemented carbide with low Ni-content used for mixing tools
- Rubber as lining in container scales
- Simodur special cast with low Ni-content used for crushing rolls

Pictures – Plastic buckets

Raw Material loading Bucket elevator and plastic buckets

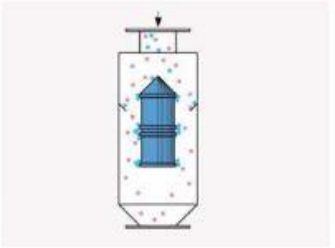


Pictures – Pneumatic Loading

Raw material intake and transportation to the silos with pneumatic blowing system.

Pictures – Metal separation

Magnetic grid for separation of magnetic materials.

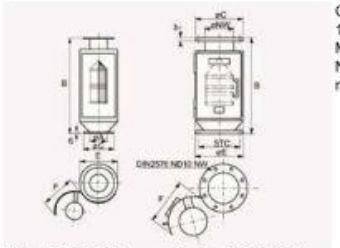


Die Eisenpartikel werden unterhalb der Magnetpolringe festgehalten

Art.-Nr.	A	B	C	E	F	Kapazität	Gewicht
	mm	mm	mm	mm	mm	t/h**	kg
BM 26.010	100	550	180	220	240	6	25
BM 26.011	150	600	230	275	310	20	39
BM 26.012	200	650	280	345	405	50	91
BM 26.013	250	750	330	430	490	75	127
BM 26.014	300	850	400	485	550	100	171
BM 26.015	400	950	500	620	665	150	286
BM 26.016	500	1100	600	780	770	200	480

** gilt für trockene, körnige bzw. kugelförmige Produkte

Permanent-Rohrmagnete für erhöhe Anforderungen mit Flanschen nach DIN 2576 ND10*



Links: BM 26.010... Rechts: BM 26.120 ...

Gehäuse aus rostfreiem Stahl (Werkstoff-Nr. 1.4301). Standardausführung mit Keramik-Magnetsystemen. Alle Baugrößen sind auch mit Neodym-Magnetsyste-
men lieferbar.

Pictures – Metall Separation

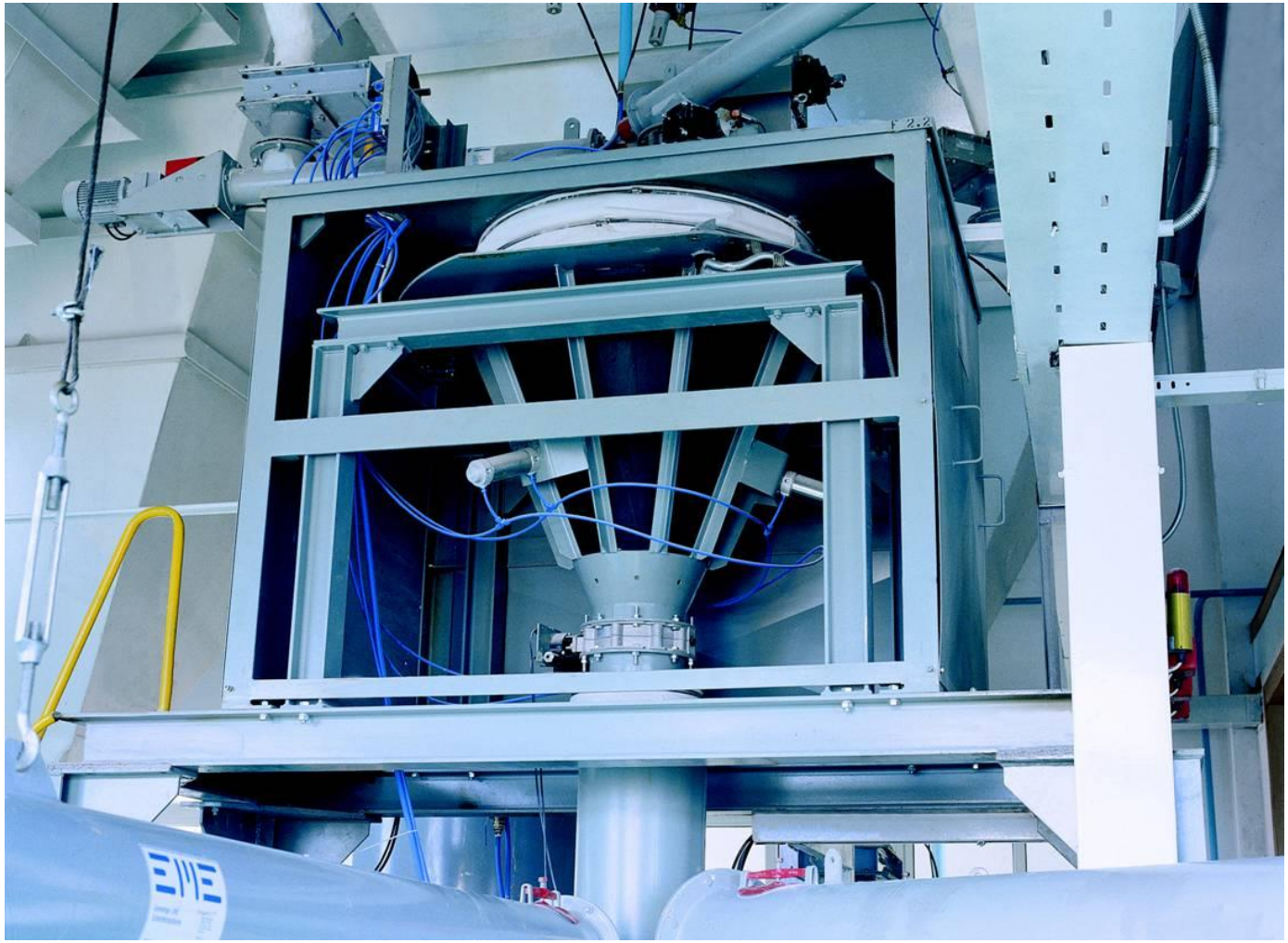
Metal separation with magnetic drum separator.

Pictures – Dosing and Weighing

Dosing and Weighing. Stainless steel silos.

Pictures – Dosing and Weighing

Scale container designed with rubber



Pictures – Batch Mixing (1)

Mixer installation and bag filling unit.

Pictures – Batch Mixing (2)

Mixer installation with container transport.

Pictures – Batch Transport

Transportation container in stainless steel and mechanical sealing system

Conclusion

With the selection of right design and material choice it is possible to minimize abrasion during the raw material handling process.

We as EME can support you with our knowledge and long term experience.

We hope to work with you in the near future!

Thank you very much for your attention

EME Maschinenfabrik Clasen GmbH

Wockerather Weg 45
41812 Erkelenz

Telefon: +49 2431 9618 0
Fax: +49 2431 74687

Stoltestraße 23
97816 Lohr am Main

Telefon: +49 9352 507 500
Fax: +49 9352 507 193

www.eme.de
contact@eme.de