INTERPROJEKT
ENGINEERING GmbH

BATCH PREHEATER

(BPH)

The reliable partner for your sustainability

We control your emissions and
save you energy

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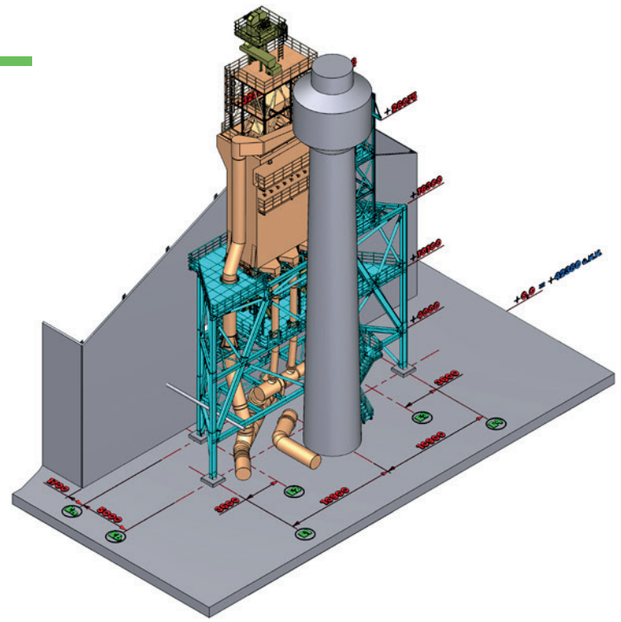
The melting process is a very energy-intensive part of the glass manufacturing process, with large quantities of heat energy remaining in the flue gas. Preheating the batch with this hot flue gas is a very efficient way of returning a large amount of this energy to the melting process.



If a new furnace is being built, the batch preheater can be integrated directly as a silo for the batch charger. In this case, the preheater would be implemented with a “backpack” as a batch material bypass. Alternatively, the preheater can be integrated in parallel with the existing raw material feed path. In this case, it can also be installed while the furnace is in operation.

System A:

Batch:	320 t / d (70 % cullet)
Flue gas volume:	29,600 Nm3 / h
Inlet flue gas temp.:	480 °C
Outlet flue gas temp.:	292 °C
Inlet batch temp.:	20 °C
Outlet batch temp.:	290 °C
Water in batch, inlet:	365 kg / h (2.5 %)

Energy balance without batch preheater:
4300 kJ / kg (1030 kcal / kg) at a melting capacity of 320 t / d

Energy balance with batch preheater:
3470 kJ / kg (830 kcal / kg) at a melting capacity of 360 t / d

- **Energy savings 19 %**
- **Increase in melting capacity 12.5 %**

There are a number of ways in which this recovered energy can be used:

- it can reduce the amount of natural gas and electricity used for the melting process, which has the additional advantage of improving the CO_2 balance
- it can improve the melting performance of the furnace without increasing its size
- because the batch is in direct contact with the flue gas, acidic components such as SOx, HCL and HF are reduced
- the NOx content can be reduced if a batch preheater is retrofitted to an existing furnace

Today’s Interprojekt batch preheater is the result of more than 30 years of operational experience. Over that time, it has been constantly further developed in close collaboration with our customers. In 2019, the batch preheater was technically revised to bring it up to date with today’s cutting edge technology.

Advantage of our batch preheater:

- We achieve a temperature of up to 300 °C for the batch material.
- The entering of false air into the batch preheater is reduced to a minimum, which is a crucial factor when it comes to efficiency.
- The large cross-section of the batch preheater ensures that the batch material flows downwards slowly. This allows us to achieve good heat transfer and reduce wear.
- The batch preheater is characterized by almost 100% availability with minimal maintenance.

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- Electrostatic precipitator
- Catalytic candle filter
- Removal of SOx, HCL, HF
- Removal of NOx / SCR
- Batch preheating
- Frozen cullet system

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