Mirit Glas

How to ensure your sight glass matches your process

– and does not become a weak link

Sight glasses are rarely in focus – until they fail

Sight glasses are often considered a minor component in industrial plants. The choice is typically made routinely, based on price, standard solutions, or prior experience. In many cases, this works well. Until it does not.

When a sight glass is not adapted to the actual operating conditions, the consequences emerge gradually. Transparency deteriorates, replacements become more frequent, unplanned downtime occurs, and maintenance requirements increase. In the worst cases, safety risks and production interruptions arise.

An incorrectly selected sight glass is rarely just a component issue.
It is a process issue.

When the standard is not sufficient

A sight glass must provide stable visual monitoring under all relevant operating conditions. This requires that the selection be based on more than nominal data and general standards.

Incorrect selections often stem from insufficient consideration of:

- Temperature variations and thermal stress
- Pressure and pressure surges
- Chemical exposure from process media and vapours
- Cleaning methods and maintenance routines

These stresses rarely act alone. Over time, they interact and reinforce one another. As a result, a sight glass that performs well in one installation may be unsuitable in another — even in seemingly similar processes.

Mirit Glas

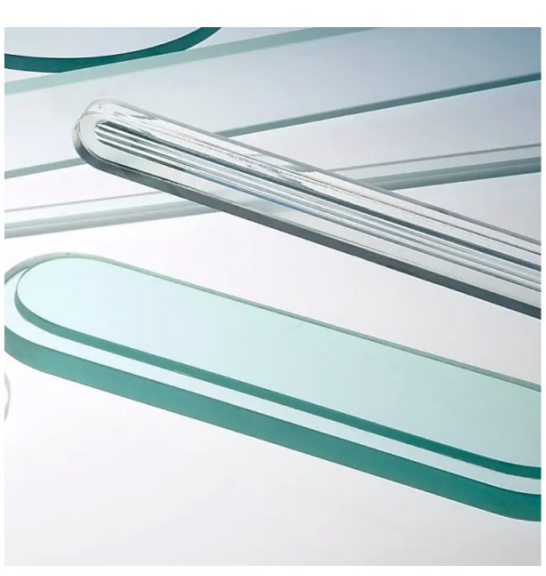
The consequences emerge over time

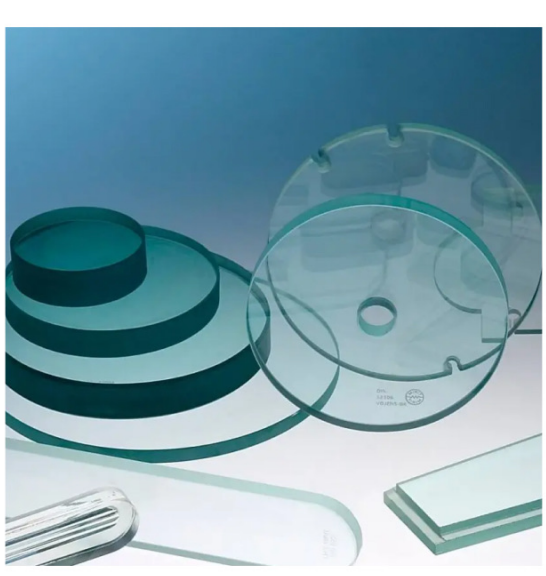
Problems with sight glasses rarely occur abruptly. They develop gradually and are therefore easily overlooked in daily operations.

Typical consequences include:

- Reduced visibility and poorer process control
- Increased need for maintenance and replacement
- Unplanned downtime and production disruptions
- Higher total operating costs

What appears to be a simple decision can therefore have a direct impact on plant stability and economic performance.





The right questions lead to the right choice

A qualified selection of a sight glass requires that the right questions are asked early in the process:

- What temperatures and mechanical loads is the sight glass exposed to, also over time?
- Do pressure variations or rapid operating changes occur?
- Are there chemical influences - direct or indirect?
- How is the installation cleaned, and how often?
- What are the consequences if visibility deteriorates?

Without clear answers, the choice is often based on assumptions rather than facts.

Mirit Glas

From purchasing an item to a technical decision

The selection of a sight glass should not be reduced to a question of price and standard dimensions. It is a technical decision that should support process performance, safety, and operation throughout the entire service life of the plant.

When the sight glass is correctly matched to the process:

- Operational reliability is increased
- Maintenance and unplanned shutdowns are reduced
- A more robust and predictable plant is achieved

This requires technical insight, documentation, and advisory support — not merely a catalogue selection.

Conclusion

Sight glasses are a small part of an installation, but a critical part of process visibility. When the choice is based solely on routine and standards, they can become a weak link in an otherwise well-designed process.

When the selection is instead based on actual operating conditions and loads, risk is reduced - and long-term plant stability is strengthened.