

GLASS-CLEAR: SELECTION OF OPTIONS

Technical data:

Pressure/Temperature:

Glasslook® 1:
Pressure: -1/+16 bar
Temperature: -25/+200°C

Glasslook® 3/4/5 :

Pressure: -1/+6 bar
Temperature: -25/+200°C

Materials:

Sight glass: Soda-lime glass to DIN 8902
Steel parts: TSIE 285 for Glasslook® 1
P 275 NH for Glasslook® 3/4/5
Glasslining: Pfaudler-WWG, blue or white

Surface protection:

Glasslook® 1:
Electroplated coating Fe/Zn8C to DIN 50691
Glasslook® 3/4/5:
Aluchrome or paint according to customer specification*

Chemical resistance:

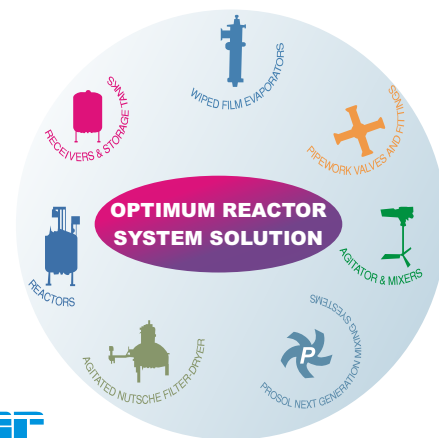
Only limited by glass and glasslining; refer to publication SB95-910-3GMM-01/02

Approval:

Type approval by TUV,
No. TUV.Db.210/1 or TUV.Db.210/2

* Electroplated coating optionally available

Description	Sizes	Part Number
Glasslook® 1 Sight glass in glasslined steel mount for installation on manhole cover nozzle or stand-alone nozzle, fastened with split flange	DN50 DN80 DN100	225 639 225 638 225 403
idem, with protective sleeve	DN100	225 498
Glasslook® 3 Manhole cover with a fused-in sight glass	DN320/420 DN350/450 DN500 DN600	225 622 225 623 225 624 225 625
Glasslook® 4 Manhole cover with two fused-in sight glasses	DN320/420 DN350/450 DN500 DN600	225 626 225 627 225 628 225 629
Glasslook® 5 Manhole cover with two fused-in sight glasses and one 20W lamp	DN320/420 DN350/450 DN500 DN600	225 630 225 631 225 632 225 633
Options 50W lamp		



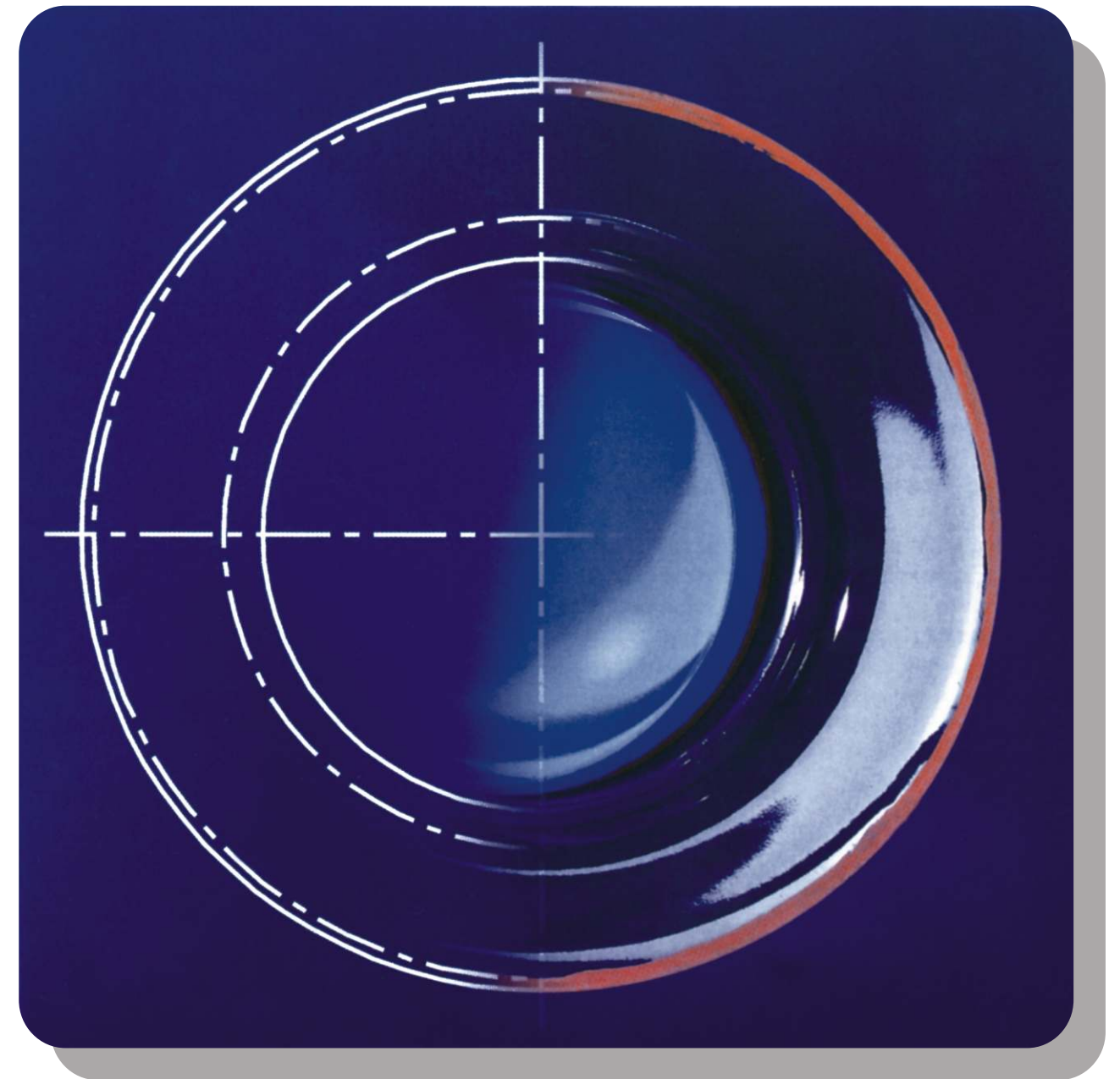
GMM PFAUDLER LIMITED

Corporate & Sales Office:
1001, Peninsula Towers,
Peninsula Corporate Park,
Ganpatrao Kadam Marg,
Lower Parel, Mumbai - 400 013
Tel.: +91-22 6650 3900
Fax: +91-22 6650 3939
E-mail: corporate@gmmpfaudler.co.in

Registered Office & Works:
Vithal Udyog Nagar, Anand-Sojitra Road,
KARAMSAD - 388 325
Tel.: (02692) 230416 / 230516
Fax: (02692) 236467
E-mail: worksko@gmmpfaudler.co.in

Regional Sales Offices:
Ahmedabad: Tel.: (079) 2754 6924, 2754 6822, Fax: (079) 2754 6894
E-mail: sales.ahmd@gmmpfaudler.co.in
Chennai: Tel.: (044) 2815 7906, Fax: (044) 2815 8249
E-mail: sales.chn@gmmpfaudler.co.in
Hyderabad: Tel.: (040) 2784 6646, 2772 1008, Fax: (040) 2784 6646
E-mail: sales.hyd@gmmpfaudler.co.in
New Delhi: Tel.: (011) 2361 1566, Fax: (011) 2362 3913
E-mail: sales.del@gmmpfaudler.co.in
Vadodara: Tel.: (0265) 235 4790, Fax: (0265) 231 1482
E-mail: sales.vad@gmmpfaudler.co.in

GLASSLOOK® SIGHT GLASSES THE FRACTURE-PROOF COMBINATION



www.gmmpfaudler.com

GLASSLOOK® - ALL YOU FACE IS SAFETY



Safety has top priority in the operation of chemical plants.

GMM Pfaudler now offers added safety in the field of sight glasses in vessels and pipelines for optical monitoring of the process.

Our enhanced sight glass type Glasslook® features a sight fused into a glass-lined steel mount. The glass and the glass lining are thus joined into a single compound.

With the combination of glassteel and soda-lime glass we achieve an extremely homogeneous stress distribution over the entire temperature range and the glass itself.

This compact combination has been used for 25 years in the US where it has proven its efficiency in practice.

Insight according to choice -

Glasslook® sight glasses from GMM Pfaudler are available in various designs :

- as sight in a glasslined steel mount for installation in the manhole cover or nozzle.
- one or two sight glasses directly fused into the manhole cover.

The option with two sight glasses is also available with a lamp.

Universal application range - the product only gets in contact with glass and the glasslining, with equal chemical resistance of both materials. The product is not contaminated.

In comparison to other metal-fused sight glasses (Hastelloy, Inconell), the Pfaudler combination offers a broader application range with higher chemical resistance.

In contrast to customary tempered sight glass panes, the Glasslook® sight glasses yield clear **benefits**.

Advantages of Glasslook® :

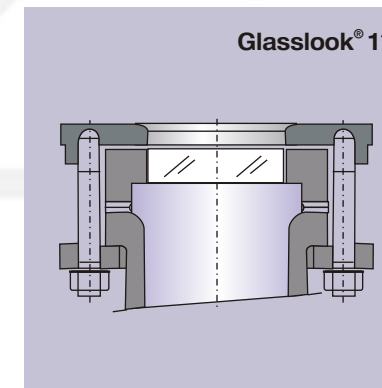
- **Resistance to thermal shock** due to homogeneous stress distribution within the glassteel compound.
- **Leakage-free**, higher resistance to pressure with high safety margins.
- **Fracture-proof, no total failure**, the sight glass remains tight even in the event of cracks.
- **Always clear sight**, higher scratch resistance, generally less sensitive to mechanical impacts.

New clear insights into the process with additional handling advantages and increased safety are now available from Pfaudler with its range of fused-in sight glasses of the Glasslook family. To meet different application demands, the glasses are even available in four different designs.

MORE FUNCTIONS FEW COMPONENTS

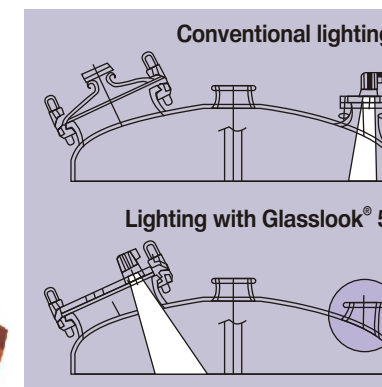
The appropriate Glasslook® for each application

Glasslook® 1 is designed to replace conventional sight glass fittings. The sight glass only has to be fastened to the nozzle with a split flange to provide immediately more safety and more insight.

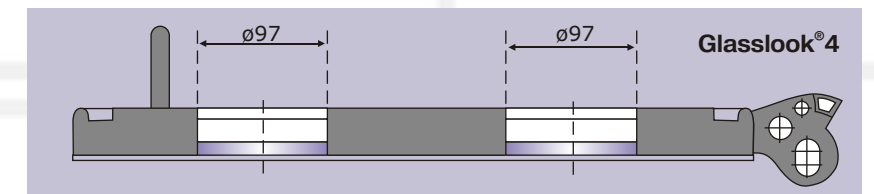
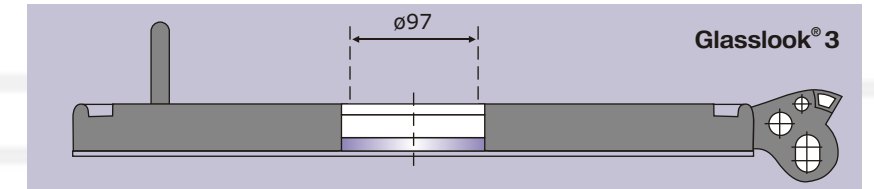


Advantages of Glasslook® 1:

- **Safe installation:** distortion and damages of the glass when tightening the flange bolts are excluded.
- **Fewer contaminated spots**, only one gasket at the nozzle.
- **GMP**-approved design.



* The actual design may slightly differ from the one shown.

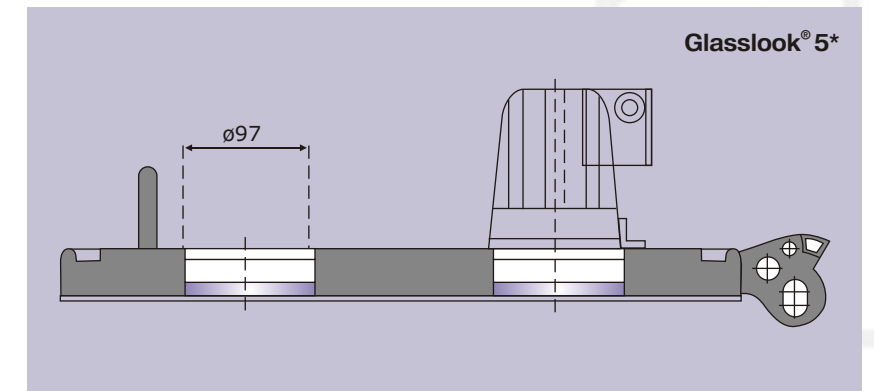


Glasslook® 3 and Glasslook® 4

feature one or two sight glasses fused right into a complete manhole cover. These compact units offer convincing advantages: The glasses, just like the manhole cover, are slightly inclined, permitting condensate to run off easily. The view into the inside of the reactor is thus never obstructed. Cleaning is equally simple: the glass or glasses are easily accessible once the cover has been opened.

Advantages of Glasslook® 3 and 4:

- Sight glasses are easy to clean.
- Condensate runs off quickly due to inclined position.
- Fewer gaskets, more safety.
- Additional glass protects against impacts from outside.
- Longer life, more safety, absolutely maintenance-free after installation.



Glasslook® 5 with additional lamp.

In contrast to lamps mounted on a nozzle, Glasslook® 5 offers not only a larger lighting angle of the light source, but also a more favourable position of the light cone.

The processes inside the reactor are thus much easier to monitor.

Advantages of Glasslook® 5:

- **Three-in-one:** manhole cover, sight glass unit, and lighting.
- One reactor nozzle remains free and can be used for other purposes.
- Non-dazzling insight/non-dazzling illumination.
- No shading-off by agitator shaft.
- Lamp sight glass is easily accessible and easy to clean.

