INDUSTRIEARMATUREN

Round sight glass plates DIN 7080

for circular sight glass fittings

DIN 7080

USAGE

MAXOS® safety sight glasses are used wherever processes in container or flow sight glasses need to be reliably monitored under thermal and chemical stress.They enable safe visual inspection and contribute significantly to process control and safety. The high durability of these sight glasses is based on a special borosilicate glass, which is characterized by excellent chemical resistance, extraordinary purity, and high homogeneity. Thanks to the characteristic low thermal expansion of borosilicate, the glass can be thermally pre-stressed (tempered), giving it particularly high temperature cycling resistance. This combination of material properties and thermal treatment makes MAXOS® sight glasses a safe and durable solution for demanding industrial applications.

APPLICATION PROPERTIES

Through production and quality inspections in the process flow, the property values of the glasses and the tight dimensional tolerances are guaranteed. With these excellent safety features, MAXOS® safety sight glasses can be used in extreme conditions.

FRACTURE BEHAVIOR

In the adjacent images, the fracture behavior of thermally pre-stressed borosilicate glass can be seen. It shatters without leaving sharp-edged break pieces. The glass break resembles a safety windshield in a car or safety glass.

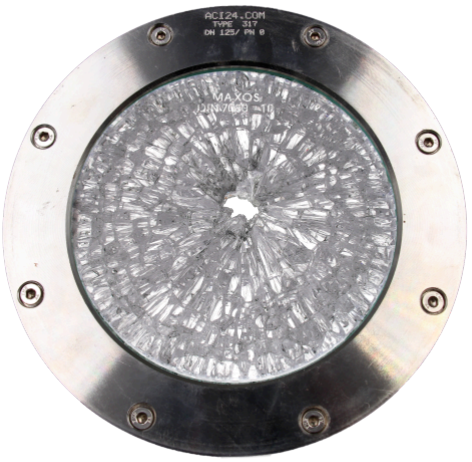
Operating conditions according to DIN 7080:	
Temperature:	280 °C in continuous operation 300 °C for max. 300 operating hours 320 °C[1] with mica protection in continuous operation
Pressure:	See table

1) Only in combination with MAXOS® safety sight glasses

Technical information	
Coefficient of expansion at 20 °C/300 °C	4.1 x 10^{-6} K^{-1}
Elastic modulus	67 x 103 N/mm^2
Thermal conductivity at 90 °C	1.2 W/(m·K)
Stress-optical coefficient K	3.2 x 10^{-6} mm^2/N
Temperature change resistance	230 °C

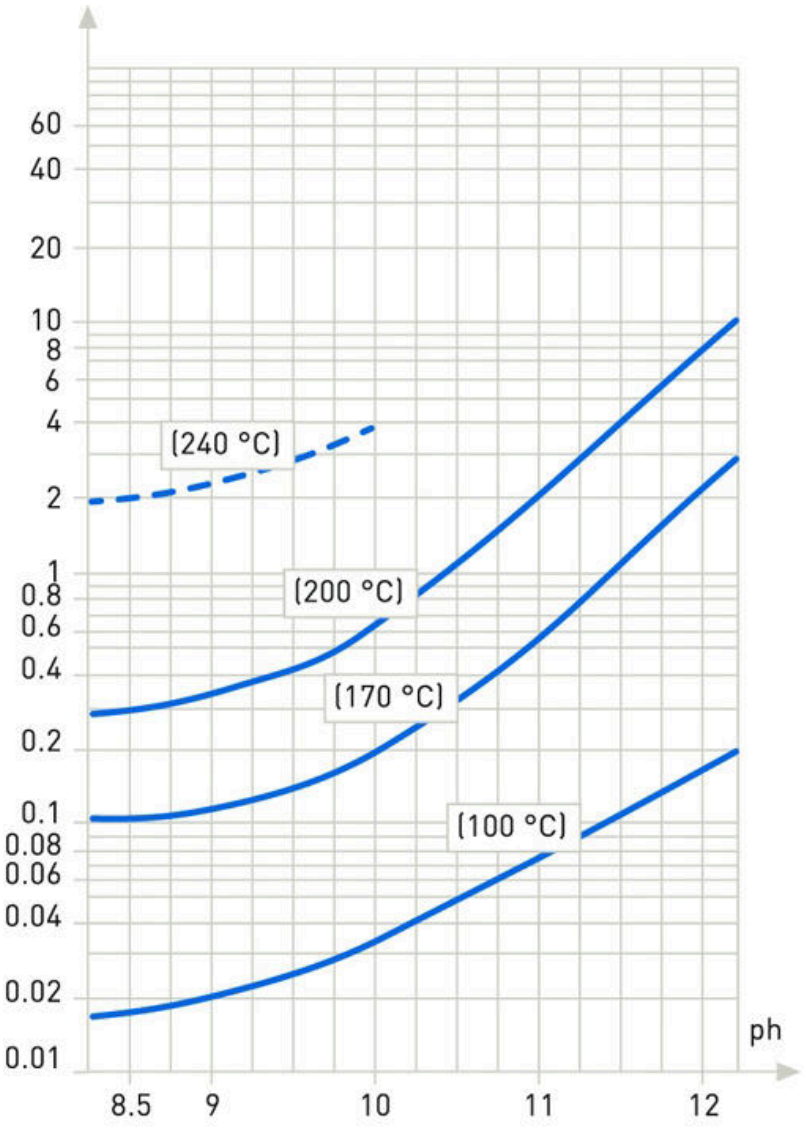
CHEMICAL RESISTANCE

Chemical resistance	
Water resistance according to DIN ISO 719/720	Hydrolysis class 1
Acid resistance according to DIN 12116	Acid class 1
Alkali resistance according to DIN 52332	Alkali class 2



DEDUCTION RATES

Material removal of MAXOS glass plates according to DIN 7080 in aqueous phase at various temperatures as a function of the pH value.



DIMENSIONAL TOLERANCES

The dimensional tolerances are based on DIN 7080 for sight glass plates made of borosilicate glass. In the adjacent table, the expected dimensional tolerances can be taken.

Tolerances according to DIN 7080	
Diameter	Tolerance
up to 135 mm	± 0.5 mm
150 to 200 mm	± 0.8 mm
over 200 mm	± 1.0 mm
Thickness	
up to 20 mm	+ 0.50 mm / – 0.25 mm
over 20 mm	+ 0.80 mm / – 0.40 mm

PERMISSIBLE MATERIAL DEFECTS

Round bubbles enclosed in glass may have a maximum diameter of 2 mm. Oval bubbles may not exceed the value (length + width)/2 = 2 mm. Tapered bubbles are not permissible.

Permissible bubble frequency	
Bubble Diameter d3	Permissible Bubble Frequency
d3 < 0.3	3 pieces per cm² visible surface
0.3 ≤ d3 ≤ 0.5	10 pieces per sight glass plate
0.5 < d3 ≤ 1	4 pieces per sight glass plate
1 < d3 ≤ 2	2 pieces per sight glass plate

04112026 - Subject to technical changes and errors!

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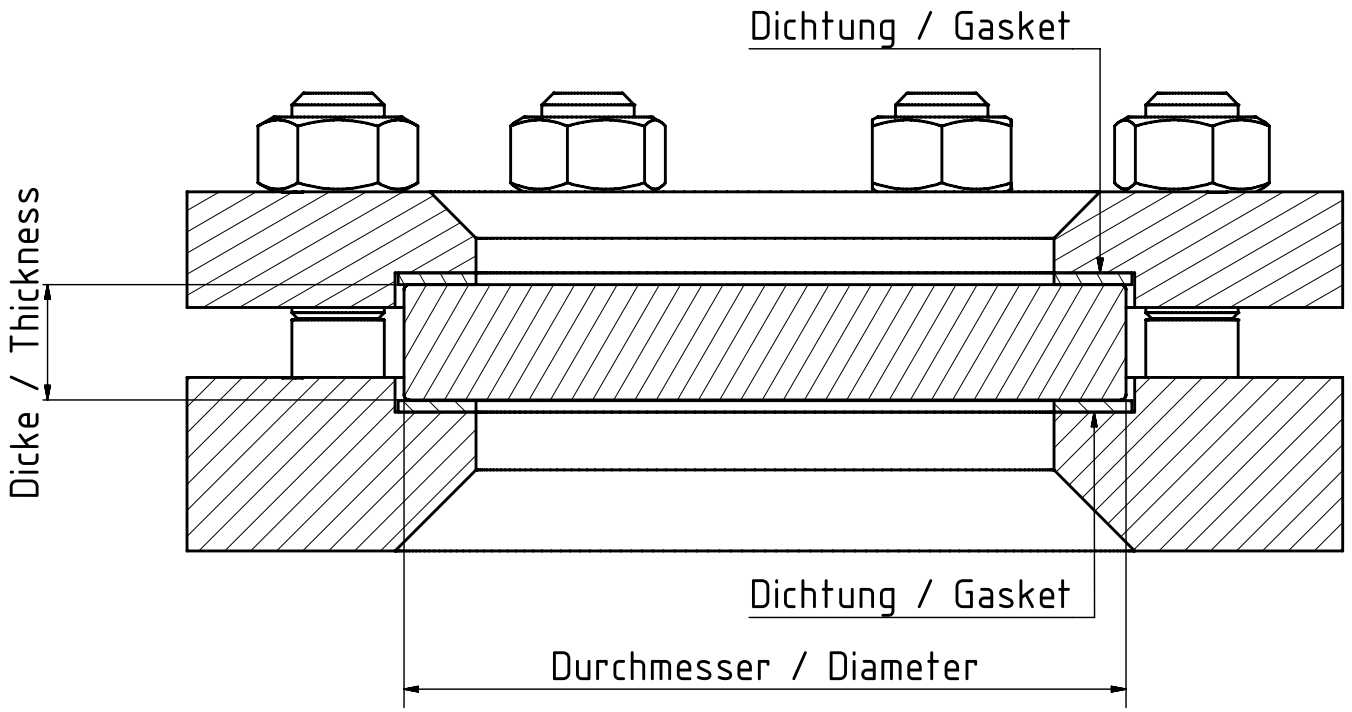
Standard dimensions according to DIN 7080				Special dimensions in reference to DIN 7080			
Dimension	Permissible pressure in bar	MAXOS® product code	ACI article number	Dimension	Permissible pressure in bar	MAXOS® product code	ACI article number
Ø 45 x 10 mm	40	2071554	12-7080-045-010-0000	Ø 24 x 10 mm	150	2071640	12-7080-024-010-0000
Ø 45 x 12 mm	50	2071556	12-7080-045-012-0000	Ø 30 x 12 mm	150	2071622	12-7080-030-012-0000
Ø 50 x 10 mm	25	2071558	12-7080-050-010-0000	Ø 30 x 15 mm	200	2071533	12-7080-030-015-0000
Ø 50 x 12 mm	40	2071561	12-7080-050-012-0000	Ø 31,6 x 12,75 mm	150	2071598	12-7080-031-012-0000
Ø 60 x 10 mm	16	2071560	12-7080-060-010-0000	Ø 33 x 14 mm	150	2071557	12-7080-033-014-0000
Ø 60 x 12 mm	25	2071562	12-7080-060-012-0000	Ø 34 x 17 mm	200	2071552	12-7080-034-017-0000
Ø 60 x 15 mm	40	2071563	12-7080-060-015-0000	Ø 40 x 10 mm	40	2071624	12-7080-040-010-0000
Ø 63 x 10 mm	16	2071566	12-7080-063-010-0000	Ø 40 x 12 mm	50	2071555	12-7080-040-012-0000
Ø 63 x 12 mm	25	2071567	12-7080-063-012-0000	Ø 44 x 10 mm	40	2071603	12-7080-044-010-0000
Ø 63 x 15 mm	40	2071569	12-7080-063-015-0000	Ø 44 x 12 mm	50	2071564	12-7080-044-012-0000
Ø 80 x 12 mm	16	2071573	12-7080-080-012-0000	Ø 55 x 6,5 mm	6	2071626	12-7080-055-006-0000
Ø 80 x 15 mm	25	2071575	12-7080-080-015-0000	Ø 55 x 10 mm	25	2071559	12-7080-055-010-0000
Ø 80 x 20 mm	40	2071576	12-7080-080-020-0000	Ø 60 x 20 mm	95	2071604	12-7080-060-020-0000
Ø 100 x 15 mm	16	2071578	12-7080-100-015-0000	Ø 63 x 8 mm	8	2071565	12-7080-063-008-0000
Ø 100 x 20 mm	25	2071579	12-7080-100-020-0000	Ø 65 x 10 mm	12	2071629	12-7080-065-010-0000
Ø 100 x 25 mm	40	2071580	12-7080-100-025-0000	Ø 65 x 15 mm	40	2071606	12-7080-065-015-0000
Ø 125 x 15 mm	10	2071581	12-7080-125-15-00000	Ø 70 x 12 mm	16	2071568	12-7080-070-012-0000
Ø 125 x 20 mm	16	2071582	12-7080-125-20-00000	Ø 70 x 15 mm	25	2071570	12-7080-070-015-0000
Ø 125 x 25 mm	25	2071583	12-7080-125-25-00000	Ø 75 x 12 mm	16	2071607	12-7080-075-012-0000
Ø 135 x 25 mm	25	2071644	12-7080-135-25-00000	Ø 80 x 10 mm	10	2071571	12-7080-080-010-0000
Ø 150 x 20 mm	10	2071586	12-7080-150-020-0000	Ø 86 x 12 mm	10	2071610	12-7080-086-012-0000
Ø 150 x 25 mm	16	2071587	12-7080-150-025-0000	Ø 90 x 10 mm	8	2071572	12-7080-090-010-0000
Ø 150 x 30 mm	25	2071588	12-7080-150-030-0000	Ø 92 x 10 mm	8	2071625	12-7080-092-010-0000
Ø 175 x 20 mm	10	2071589	12-7080-175-20-00000	Ø 94 x 12 mm	10	2071671	12-7080-094-012-0000
Ø 175 x 25 mm	16	2071590	12-7080-175-025-0000	Ø 95 x 10 mm	6	2071649	12-7080-095-010-0000
Ø 175 x 30 mm	25	2071591	12-7080-175-30-00000	Ø 95 x 15 mm	16	2071574	12-7080-095-015-0000
Ø 200 x 20 mm	8	2071592	12-7080-200-20-00000	Ø 100 x 10 mm	7	2071577	12-7080-100-010-0000
Ø 200 x 25 mm	10	2071593	12-7080-200-25-00000	Ø 100 x 12 mm	10	2071642	12-7080-100-012-0000
Ø 200 x 30 mm	16	2071594	12-7080-200-30-00000	Ø 105 x 15 mm	16	2071662	12-7080-105-015-0000
Ø 250 x 25 mm	8	2071595	12-7080-250-25-00000	Ø 110 x 12,5 mm	10	2071674	12-7080-110-012-0500
Ø 250 x 30 mm	10	2071596	12-7080-250-30-00000	Ø 110 x 20 mm	25	2071613	12-7080-110-020-0000
Ø 265 x 30 mm	8	2071628	12-7080-265-30-00000	Ø 113 x 15 mm	10	2071672	12-7080-113-015-0000
				Ø 115 x 15 mm	10	2071612	12-7080-115-015-0000
				Ø 120 x 10 mm	4	2071611	12-7080-120-010-0000
				Ø 120 x 15 mm	10	2071630	12-7080-120-015-0000
				Ø 120 x 18 mm	16	2071663	12-7080-120-018-0000
				Ø 125 x 30 mm	40	2071584	12-7080-125-30-00000
				Ø 130 x 15 mm	10	2071643	12-7080-130-015-0000
				Ø 135 x 15 mm	8	2071615	12-7080-135-15-00000
				Ø 140 x 15 mm	8	2071666	12-7080-140-015-0000
				Ø 150 x 10 mm	2	2071664	12-7080-150-010-0000
				Ø 150 x 15 mm	8	2071585	12-7080-150-015-0000
				Ø 160 x 20 mm	12	2071617	12-7080-160-020-0000
				Ø 170 x 15 mm	5	2071645	12-7080-170-015-0000
				Ø 170 x 20 mm	10	2071670	12-7080-170-020-0000
				Ø 210 x 25 mm	10	2071621	12-7080-210-25-00000
				Ø 250 x 20 mm	4	2071673	12-7080-250-20-00000



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