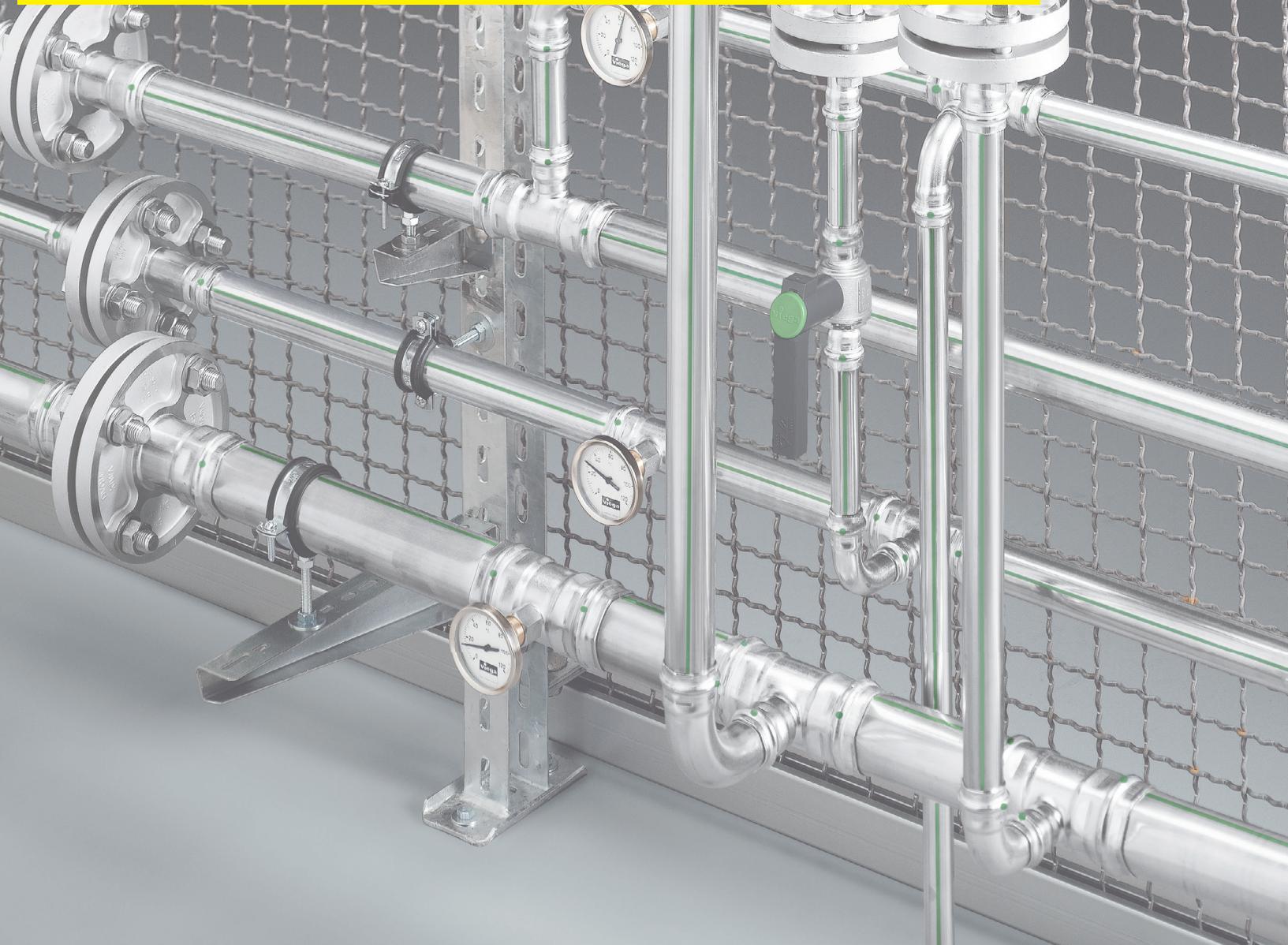




# Areas of Application of Metallic Installation Systems

Information for planning and completion

02.15.2016



viega

## Content

Conversion Bar / Pascal . . . . .	3
Sealing elements – Technical data . . . . .	3

## Pipes and press connectors – Media transported

Water, Antifreeze and Anti-corrosion media,	
Heat carriers . . . . .	4
Oils. . . . .	5
Gases. . . . .	6
Special media . . . . .	8

## Valves – Media transported

Water, Anti-freeze and Anti-corrosion media,	
Heat carriers . . . . .	9
Oils. . . . .	10
Gases. . . . .	11
Special media . . . . .	13
Material suitability request . . . . .	14

## Impressum

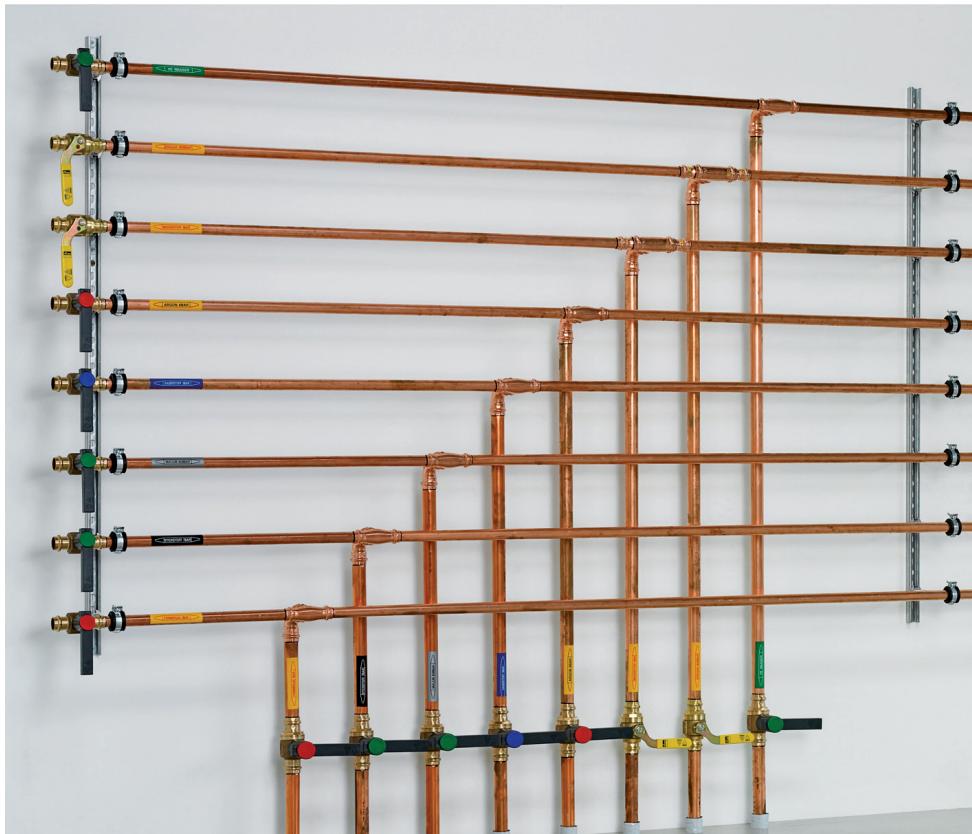
»Areas of application of metallic installation systems«  
Information for planning and completion  
566263

© Viega GmbH & Co. KG, Attendorn  
All rights – including duplication – reserved

**Publisher**  
Viega GmbH & Co. KG  
Sanitär- und Heizungssysteme  
Postfach 430/440  
DE-57428 Attendorn

**Address**  
Viega Platz 1  
57439 Attendorn – Germany  
Tel +49 2722 61-0  
Fax +49 2722 61-1415

[www.viega.com](http://www.viega.com)



Viega press connector technology with the systems Sanpress, Sanpress Inox, Prestabo and Profipress have proven themselves to be valuable in drinking water and building installations over a period of many years. Use in industrial systems with special operating conditions such as pressure, temperature and concentration of the transported media, which make a careful choice of the pipe and sealing material extremely important.

This informative brochure helps make the choice easier. In some cases, the »intended use« of a system has to be approved by our service centre. Please use our fax request form checklist in the attachment.

#### Note

Viega Press systems are not certified for pharmaceutical and foodstuff installations.

The contents of this brochure are for information purposes only. We reserve the right to make changes, which serve new discoveries and advancements.

#### Conversion Bar / Pascal

bar	mbar	Pa	kPa	hPa	MPa
1	1000	100 000	100	1 000	0,1
0,001	1	100	0,1	1	0,0001
0,01	10	1000	1	10	0,001
0,1	100	10 000	10	100	0,01

#### Sealing elements – Technical data

Sealing element – abbreviation	Technical name	Viega press system – application	Colour
EPDM	Ethylen-Propylen-Dien-Kautschuk	Sanpress Inox/Sanpress/Profipress/Megapress	Shiny black
HNBR	Acrylnitril-Butadien-Kautschuk	Sanpress Inox G/Profipress G/Megapress G	Yellow
FKM	Fluor-Kautschuk	Sanpress Inox/Sanpress/Profipress	Matt black

## Pipes and press connectors – Media transported

### Water, antifreeze and anti-corrosion media, heat carriers

		System name			Profipress		Profipress S		Sanpress			Prestabo			Prestabo		Megapress		Seapress	
		Pipe material	Copper	Copper	Copper	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Galvanised steel	Hot dipped galvanised	Galvanised steel	Galvanised steel	Galvanised steel	Steel, thick-walled	Steel, zinc-nickel coating	CuNiFe			
		Connector material	Copper	Copper	Gummertal	Stainless steel			Gunmetal	Galvanised steel	Galvanised steel	Galvanised steel	Galvanised steel	Galvanised steel	Steel, zinc-nickel coating	CuNiFe				
		Sealing element	EPDM	FKM		EPDM			EPDM	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM			
		Medium	Comment	p <sub>max</sub> [MPa]	T <sub>max</sub> [°C]															
Water		Drinking water	Requirements acc. DW Ordinance, DIN 50 930-6	1,6	110	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Prepared water (not drinking water)	Full de-salinated, de-ionised, de-mineralised, distilled (open systems)	1,6	110			✓												
		Cooling water; closed system	Open system after consultation	1,6	≥ -25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Steam	Low pressure steam systems	≤ 0,1	120	✓ <sup>1)</sup>		✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	
		Well water	Requirements acc. DW Ordinance	1,6	110	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Pumps - hot water heating	Acc. to DIN EN 12 828	1,6	105	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

<sup>1)</sup>

Exchange the sealing element for FKM

2)

Without additives

3)

Anti-corrosion to AGI Q151

<sup>7)</sup>Corrosion protection for the pipes in acc. with AGI Q 151,  
due to the zinc-nickel coating, the Megapress connectors do not require any corrosion protection

### Antifreeze and anti-corrosion media, heat carriers

		Product/manufacturer																	
	Antifrogen N/Clariant		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Antifrogen L/Clariant		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Antifrogen Sol (Solar systems)/Clariant		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Antifreeze, Cooling sole Concentration 50 %		1,6	-25 to 110	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ethylene glycole (Ethan-1,2-diol)				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Propylene glycole (1,2-Propanediol)				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Tyfoxit/Tyforop-Chemie				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Tyfocor/Tyforop-Chemie				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

<sup>3)</sup>Anti-corrosion to AGI Q151

<sup>7)</sup>Corrosion protection for the pipes in acc. with AGI Q 151,  
due to the zinc-nickel coating, the Megapress connectors do not require any corrosion protection

## Oils

	System name	Profipress	Sanpress			Profipress G	Sanpress Inox G	Prestabo	Megapress	Megapress G	Seapress
	Pipe material	Copper	Stainless steel	Stainless steel	Stainless steel	Copper	Stainless steel	Galvanised steel	Steel Thick-walled	Steel Thick-walled	CuNiFe
	Connector material	Copper Gunmetal	Stainless steel			Gunmetal	Stainless steel	Galvanised steel	Steel, zinc-nickel coating	Steel, zinc-nickel coating	CuNiFe
	Sealing element	EPDM		EPDM			HNBR	HNBR	EPDM	HNBR	EPDM
Oils	Medium	Comment	P <sub>max</sub> [MPa]	T <sub>max</sub> [°C]							
Mineral oil SAE	15 – 108mm	1,6	70								✓
Heating oil acc. DIN 51603-1 Diesel acc. DIN EN 590	In acc. with TRbF 12 – 54mm	0,5	40								✓
Palm oil	DIN W 51805										✓ <sup>4)</sup>
Rape seed oil											✓ <sup>4)</sup>
Soya oil											✓ <sup>4)</sup>
Sunflower oil											✓ <sup>4)</sup>
Biodiesel	EN 14214										✓ <sup>1)</sup>
Palm oil heating											✓ <sup>1)</sup>

<sup>1)</sup> Exchange the sealing element for FKM<sup>4)</sup> In combination with Sanpress pipe 1.4521 and 1.4401<sup>8)</sup> After consultation with the factory in Attendorn

## Pipes and press connectors – Media transported

### Gases

System name		Propress S	Sanpress		Propress G	Sanpress Inox G		Prestabo	Megapress	Megapress G	Seapress
Pipe material	Copper	Copper	Stainless steel 1.4521	Stainless steel 1.4401	Copper	Stainless steel	Galvanised steel	Hot dipped galvanised steel	Steel Thick-walled	Steel Thick-walled	CuNiFe
Connector material	Copper/Gummiteal	Copper/Gummiteal	Stainless steel	Gummiteal	Copper/Gummiteal	Stainless steel	Galvanised steel	Galvanised steel	Steel, zinc-nickel coating	Steel, zinc-nickel coating	CuNiFe
Sealing element	EPDM	FKM	EPDM		HNBR		EPDM		HNBR		EPDM
Medium	Comment	p <sub>max</sub> [MPa]	T <sub>max</sub> [°C]								
Pressurised air	Oil concentration ≤ 25 mg/m <sup>3</sup>	12 – 54 mm	1,6	✓	✓	✓	✓	✓	✓	✓	✓
	Oil concentration ≥ 25 mg/m <sup>3</sup>	64 – 108 mm	✓ <sub>1)</sub>	✓				✓ <sub>4)</sub>	✓ <sub>1)</sub> <sup>6)</sup>	✓	✓ <sub>1)</sub>
		12 – 54 mm	1,6					✓ <sub>4)</sub>	✓ <sub>1)</sub> <sup>6)</sup>		
Natural gas	64 – 108 mm										
	Acc. to G 260		0,5								
	Liquid gas, propane, butane, methan										
Acetylene	Testing pressure 2,4 MPa	15 – 54 mm	0,15								
	12 – 54 mm	1,6									
	64 – 108 mm	1,0	60								
Argon	CO <sub>2</sub> + O <sub>2</sub> dry	12 – 54 mm	1,6	✓	✓	✓	✓	✓	✓	✓	✓
	64 – 108 mm	1,0									
	Keep oil and fat-free										
Oxygen – O <sub>2</sub>	12 – 54 mm	1,0		✓							
	After the evaporator	12 – 54 mm	1,6	✓							
	64 – 108 mm	1,0									
Hydrogen – H <sub>2</sub>	12 – 108 mm	0,5		✓							
	Dry	12 – 54 mm	1,6	✓							
	64 – 108 mm	1,0									
Carbon dioxide – CO <sub>2</sub>	No stainless steel components permitted	1,6		✓							
	12 – 54 mm										
	64 – 108 mm	1,0									

<sup>6)</sup> Almost condensate free  
<sup>7)</sup> BAM certificated

<sup>1)</sup> Exchange the sealing element for FKM  
<sup>4)</sup> In combination with Sanpress pipe 1.4521 and 1.4401  
<sup>5)</sup> With HTR requirements (Higher Thermal Resistance)  
<sup>max.</sup> permitted operating temperature P<sub>max</sub> = 0,1 MPa

## Gases

	System name	Profipress S	Profipress G	Sanpress Inox G	Profipress G	Sanpress Inox G	Prestab G	Megapress G	Megapress G	Seapress
Gases	Pipe material	Copper	Copper	Stainless steel 1.4521	Stainless steel 1.4401	Stainless steel 1.4521	Galvanised steel	Hot dipped galvanised steel	Steel Thick-walled	Steel Thick-walled
	Connector material	Copper	Copper	Stainless steel	Gummetal	Copper Gummetal	Galvanised steel	Galvanised steel	Steel, zinc-nickel coating	Steel, zinc-nickel coating
Purity requirements acc. to DIN EN 437 on request	Sealing element	EPDM	FKM	EPDM	HNBR	HNBR	EPDM	EPDM	HNBR	EPDM
Medium	Comment	p <sub>max</sub> [MPa]	T <sub>max</sub> [°C]							
Low vacuum	P <sub>abs</sub> = 1 hPa	70	✓	✓	✓	✓	✓	✓	✓	✓
Forming gas, dry / Welding inert gas	Ar + CO <sub>2</sub> (Example Corgon)	15–54 mm 64–108 mm	1,6 1,0	✓	✓	✓	✓	✓	✓	✓
Nitrous oxide (Laughing gas)		12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓				
Ethane		12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓				
Ethene (Ethylene)		12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓				
Helium		12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓				
Krypton		15–54 mm 64–108 mm	1,6 1,0	✓	✓	✓				
Neon		15–54 mm 64–108 mm	1,6 1,0	✓	✓	✓				
Propan (Propylene)		15–54 mm 64–108 mm	1,6 1,0	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	
Xenon		15–54 mm 64–108 mm	1,6 1,0	✓	✓	✓	✓	✓	✓	
Synthetic air		12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓	✓	✓	✓	

<sup>1)</sup> Exchange the sealing element for FKM

## Pipes and press connectors

### Special media

System name	ProFipress	Sanpress			ProFipress G	Sanpress Inox G	Prestabo	Megapress	Megapress G	Seapress
Pipe material	Copper	Stainless steel 1.4521	Stainless steel 1.4401	Stainless steel 1.4521	Copper	Stainless steel 1.4401	Galvanised steel	Steel Thick-walled	Steel Thick-walled	CuNiFe
Connector material	Copper Gunmetal	Stainless steel			Gummetsal	Copper Gunmetal	Galvanised steel	Steel zinc-nickel coating	Steel zinc-nickel coating	CuNiFe
Sealing element	EPDM	EPDM	EPDM	EPDM	HNBR	HNBR	EPDM	EPDM	HNBR	EPDM
Medium	Comment	$p_{\max}$ [MPa]			$T_{\max}$ [°C]					
Carbamide solution	Maximum concentration 40 %	1,0	40		✓	✓	✓			
Ethanol		1,6	25	✓	✓	✓	✓			
Methanol	Caution: Poisonous!	1,6	25		✓	✓	✓			
Condensate	From gas condenser boiler, not from oil condenser boilers!	1,6	110		✓	✓	✓			
Condensate	From steam	1,6	110	✓ <sup>6)</sup>	✓	✓	✓	✓	✓	✓ <sup>8)</sup>
Glycerine tracetate		0,1	20		✓	✓	✓			
Sodium hydroxide solution	30 % aqueous solution	1,0	20		✓	✓	✓			
Sodium hydroxide solution	50 % aqueous solution	1,0	60		✓	✓	✓			
Acetone	Liquid	0,5	-10 to 40	✓	✓	✓	✓			
Ammoniac	Medium free of $\text{CO}_2 + \text{H}_2\text{O}$ Caution: Poisonous!	0,2	25		✓	✓	✓			
Biogas – before Biogas upgrading	45 – 70 % $\text{CH}_4 / 20 – 45\% \text{CO}_2$	0,5	70					✓		
Biogas – after Biogas upgrading	Acc. to G 260 und G 262	0,5	70					✓ <sup>5)</sup>	✓	
Fermenter heating	Substrate temperature 65 °C	1,0	105							

<sup>5)</sup> With HTR requirements (Higher Thermal Resistance)  
max. permitted operating temperature  $p_{\max} = 0,1 \text{ MPa}$

<sup>6)</sup> Without contamination

<sup>8)</sup> After consultation with the factory in Attendorn

## Valves – Media transported

### Water, anti-freeze and anti-corrosion media, heat carriers

Water	Medium	Comment	p <sub>max</sub> [MPa]		T <sub>max</sub> [°C]		Gas ball valve
			Product name	Easytop-Ball valve	Easytop-Ball valve	Free flow valve	
			Model No.	2270, 2270.4 and 2270.10	2270.1 and 2270.2	2242 and 2242.2	Easytop Inox-Ball valve
	Connector material	Gunmetal	Gunmetal	Gunmetal	Stainless steel	Gummetal	Brass
	Seal	EPDM		EPDM	EPDM	HNBR	
Drinking water	Requirements acc. DW Ordinance, DIN 50 930-6	1,6	110	✓	✓	✓	✓
Prepared water (not drinking water)	Full de-salinated, de-ionised, de-mineralised, distilled (open systems)	1,6	110		✓		
Cooling water, closed system	Open system after consultation	1,6	≥-25	✓	✓		
Well water	Requirements acc. DW Ordinance	1,6	110	✓	✓		
Pumps - hot water heating	Acc. to DIN EN 12828	1,6	105	✓	✓		
<b>Anti-freeze and anti-corrosion media,heat carriers</b>							
Produkt/Hersteller							
Antifrogen N/Clariant							
Antifrogen L/Clariant							
Antifrogen Sol (Solaranlagen)/Clariant							
Antifreeze, cooling sole concentration 50 %							
Ethylenglykol (Ethan-1,2-diol)							
Propylenglykol (1,2-Propanediol)							
Tyfoxit/Tyforop-Chemie							
Tyfocor/Tyforop-Chemie							

## Oils

	Product name	Easytop-Ball valve	Easytop-Ball valve	Free flow valve	Easytop Inox-Ball valve	Profiress G-Gas ball valve	Gas ball valve
	Model No.	2270, 2270.4 and 2270.10	2270.1 and 2270.2	2242 and 2242.2	2370	2670, 2670.4, 2671 und 2671.3	G 2101
	Connector material	Gunmetal	Gunmetal	Gunmetal	Stainless steel	Gunmetal	Brass
Oils	Seal	EPDM		EPDM	EPDM	HNBR	
Medium	Comment	$P_{max}$ [MPa]	$T_{max}$ [°C]				
Mineral oil SAE		1,6					
Palm oil							
Rape seed oil	DIN W 51805		70				
Soya oil							
Sunflower oil							
Palm oil heating	Fittings not in palm oil	90		✓	✓		

## Valves – Media transported

## Gases

Gases		Purity requirements acc. to DIN EN 437 on request	Medium	Comment	$P_{max}$ [MPa]	$T_{max}$ [°C]	Easytop-Ball valve		Easytop-Inox-Ball valve		ProfiPress G-Gas ball valve	
Product name	Model No.						Easytop-Ball valve	Easytop-Ball valve	Free flow valve	Easytop Inox-Ball valve	ProfiPress G-Gas ball valve	Gas ball valve
	2270, 2270.4 and 2270.10	2270.1 and 2270.2			2242 and 2242.2	2370	2670, 2670.4, 2671 und 2671.3				G 2101	
		Gunmetal	Gunmetal		Gunmetal	Stainless steel					Brass	
			Seal	EPDM		EPDM					HNBR	
Pressureised air		Oil concentration ≤ 25 mg/m <sup>3</sup>		12 – 54 mm		1,6		✓		✓		
		64 – 108 mm								✓		
Natural gas		Oil concentration ≥ 25 mg/m <sup>3</sup>		12 – 54 mm		1,6		✓		✓		
		64 – 108 mm								✓		
Liquid gas, propane, butane, methane		Acc. to G 260		0,5				✓		✓		
Argon		Acc. to G 260		0,5		12 – 54 mm		✓		✓		
		64 – 108 mm		1,0		60		✓		✓		
Carbonogen		CO <sub>2</sub> + O <sub>2</sub> Dry		12 – 54 mm		1,6		✓		✓		
		64 – 108 mm		1,0				✓		✓		
Nitrogen – N <sub>2</sub>		After the evaporator		12 – 54 mm		1,6		✓		✓		
		64 – 108 mm		1,0				✓		✓		
Hydrogen – H <sub>2</sub>		12 – 108 mm		0,5				✓		✓		
Carbon dioxide – CO <sub>2</sub>		Dry		12 – 54 mm		1,6		✓		✓		
		64 – 108 mm		1,0				✓		✓		
Carbon monoxide – CO		No stainless steel components permitted		1,6		12 – 54 mm		✓		✓		
		64 – 108 mm		1,0				✓		✓		

5) With HTR requirements (Higher Thermal Resistance)  
max. permitted operating temperature  $P_{max} = 0,1 \text{ MPa}$

## Gases

	Product name	Easytop-Ball valve	Easytop-Ball valve	Free flow valve	Easytop Inox-Ball valve	Profipress G-Gas ball valve	Gas ball valve
Gases	Model No.	2270, 2270.4 and 2270.10	2270.1 and 2270.2	2242 and 2242.2	2370	2670, 2670.4, 2671 und 2671.3	G2101
Purity requirements acc. to DIN EN 437 on request	Medium	Comment	Seal	EPDM	EPDM	HNBR	
Low vacuum	$P_{\text{abs}} = 1 \text{ hPa}$		70	✓	✓	✓	
Forming gas, dry / Welding inert gas	Ar + CO <sub>2</sub> (Example Cargon)	12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓	
Nitrous oxide (Laughing gas)		12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓	
Ethane		12–54 mm 64–108 mm	1,6 1,0	✓	✓	✓	
Ethene (Ethylene)		12–54 mm 64–108 mm	1,0	60	✓	✓	
Helium		12–54 mm 64–108 mm	1,6 1,0		✓	✓	
Krypton		15–54 mm 64–108 mm	1,6 1,0		✓	✓	
Neon		15–54 mm 64–108 mm	1,6 1,0		✓	✓	
Xenon		15–54 mm 64–108 mm	1,6 1,0		✓	✓	
Synthetic air		12–54 mm 64–108 mm	1,6 1,0		✓	✓	

## Valves

## Special media

Special media Purity requirements acc. to DIN EN 437 on request			Easytop-Ball valve		Easytop-Ball valve		Free flow valve		Easytop Inox-Ball valve		Profigress G-Gas ball valve		Gas ball valve		
	Medium	Comment	P <sub>max</sub> [MPa]	T <sub>max</sub> [°C]											
Carbamide solution	Maximum concentration 40 %		1,0	40	✓										
Ethanol			1,6	25	✓	✓			✓						
Methanol	Caution: Poisonous!		1,6	25	✓				✓						
Condensate	From gas condenser boiler, not from oil condenser boilers!		1,6	110					✓						
Condensate	From steam		1,6	110	✓ <sup>6)</sup>		✓ <sup>6)</sup>		✓ <sup>6)</sup>						
Sodium hydroxide solution	50 % aqueous solution		1,0	60					✓						
Acetone	Liquid		0,5	-10 bis 40	✓		✓		✓						
Biogas – after Biogas upgrading	Acc. to G260 und G262		0,5	70							✓ <sup>5)</sup>				
Fermenter heating	Substrate temperature 65 °C outside of the fermenter		1,0	105	✓				✓						

5) With HTR requirements (Higher Thermal Resistance)  
max. permitted operating temperature P<sub>max</sub> = 0,1 MPa

6) Without contamination

## Material suitability request

### Recommendation

viega

#### Contact

Service Center – Technische Beratung  
E-Mail                   technical.support@viega.com

Date:

(for Viega use only)

Viega process-No.		Viega project-No.	
Date		Author	
Customer-No.			

①	Customer/Company		②	End consumer	
	Street			Contact person	
	Postcode/Town			Telephone	
	Telephone			Project size	
	Contact person			Running metre	
		Connectors			

③	Dimension: (mark the Vieaga-System in question with a cross)												
	Copper / Gunmetal EPDM	Profinpress Copper	Sanpress-Pipe 1.4401 Stainless steel	Sanpress-Pipe 1.4401 Stainless steel	Sanpress-Pipe 1.4521 Stainless steel	Sanpress-Pipe 1.4521 Stainless steel	Copper / Gunmetal HNBR	Profinpress G Copper	Sanpress Inox G Stainless steel	Prestab Galvanized steel	Prestab sendzimir Galvanized steel	Steel zinc-nickel coating EPDM	Steel zinc-nickel coating HNBR
④	Function of the whole system?												

⑤	What function do the Viega components have in the system?									
⑥	Which media will the material to be tested be exposed to? (Please enclose safety data sheets and specification sheets)									
⑦	Are other substances expected in the medium? Example: Additives, cleaning materials, etc. When yes which substances and which concentration.									
⑧	What quantity of the medium is to be transported? Please include relationship of the components when more than one.									

Operating conditions										
⑨	T <sub>max</sub>	Pressure surges			<input type="checkbox"/> yes	<input type="checkbox"/> no				
	T <sub>min</sub>	Stagnation			<input type="checkbox"/> yes	<input type="checkbox"/> no				
	p <sub>max</sub>	System			<input type="checkbox"/> open	<input type="checkbox"/> closed				
	p <sub>min</sub>	Location of the unit			<input type="checkbox"/> outdoors	<input type="checkbox"/> indoors				
	pH <sub>max</sub>									
pH <sub>min</sub>										
⑩	What is the planned lifespan of the system?									

Our recommendation are based on the information given reading use and operating conditions. The existing guarantee, especially the statutory guarantee, is not extended by this recommendation.