ENVELOPE GASKETS.

PROPERTIES

- Very good media resistance with the exception of liquid alkali metals and some fluorine compounds
- Suitable for increased requirements in operational safety, tightness and product purity
- Long-term stable compression and recovery characteristics
- PTFE is physiologically harmless for continuous operation temperatures up to 260 °C as per BG no. 21
- Low permeability towards gases and liquids
- Anti-adhesive surface
- UV and ageing resistant [does not apply to the non-metallic insert made from Centellen WS 3822]
- Good non-stick characteristics
- Excellent [di]electric properties
- FDA-conform PTFE-envelope as well as non-metallic insert made from UNISEAL® [WS 3400], AFM 34 and UNIFLUOR® [WS 7550]
- Complies with TA Luft 2002 [VDI 2440/2200] leakage requirements
- For compounds with conductive pigment TFM 6221: Electrical conductivity, FDA-conform
- For designs with corrugated ring and/or SIGRAFLEX® EMAIL [WS 3825]: Temperature resistance from -200 °C to 200 °C [short term 230 °C]
- For designs with SIGRAFLEX® EMAIL [WS 3825]: The metal reinforcement in the SIGRAFLEX® material, which is close to the surface and free from advesives, prevents sideway slipping of the graphite laminate for unreinforced or glued graphite inserts [unreinforced or glued] due to flow patterns of the PTFE-envelope
- For designs with SIGRAFLEX® EMAIL [WS 3825]: The cold flow and warm flow characteristics typical for PTFE is compensated by the superior recovery behaviour even at high temperatures
- For designs with corrugated ring and/or SIGRAFLEX® EMAIL [WS 3825]: Increased blow-out resistance
- For designs with corrugated ring and/or Centellen [WS 3822]: Temperature resistance from -50 °C to 150 °C

APPLICATIONS

- For aggressive media which is hazardous for the health
- Broad range of applications primarily in the chemical and petrochemical sector
- Use in food sector and pharmaceutical production
- Used for high requirements in process purity
- Gasket systems for pipeline flanges, device and container flanges
- In steel pipelines:
  - TFM™-envelope gasket with corrugated metal ring
  - TFM™-envelope gasket with aramid fiber insert with/without corrugated metal ring
  - TFM™-envelope gasket with PTFE insert with/without corrugated metal ring
- For glass lined pipelines, containers, nozzles and assembly openings as well as for low surface pressures, waviness and warping of the flange sealing surfaces and for sensitive flange surfaces, stress and bend sensitive flange connections:
  - TFM™-envelope gasket with SIGRAFELX® EMAIL insert with/without corrugated metal ring
  - TFM™-envelope gasket with PTFE insert with/without corrugated metal ring

PRODUCT RANGE

Technical delivery conditions for non-metallic inserts as per DIN 28091

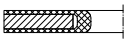
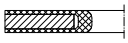
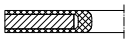
- Envelope gaskets
  - Design with corrugated metal ring for the use in steel pipelines, dimensions as per DIN EN 1514-1 and DIN EN 12560-1 or ASME B 16.21
  - Design with non-metallic insert, dimensions as per DIN EN 1514-3 and DIN EN 12560-3 or ASME B 16.21
  - Design with corrugated metal ring and non-metallic insert, dimensions as per DIN EN 1514-3 and DIN EN 12560-3 or ASME B 16.21
- Envelope gaskets with corrugated metal ring WS 7110/1.4571 PW-I; thickness: 3.5 mm
- Envelope gaskets with non-metallic insert WS 7110/3822; WS 7110/3825; WS 7110/7550; thickness: 4.0 mm
- Envelope gaskets with corrugated ring and non-metallic inserts WS 7110/1.4571/3822; WS 7110/1.4571/3825; WS 7110/1.4571/7550; thickness: 6.5 mm or in consideration of the design recommendation 8.5/10.5 mm

Additionally: IDT Profile Overview | ED series

Product Name	**Envelope gasket with corrugated metal ring and diffusuion barrier [PW-I]**
Product name	**WS 7110/1.4571**
Product image	
Profile No.	ED01 
Features	The PTFE-envelope consists of Dyneon™ TFM™ 1600 and has an interior diffusion barrier [4.0 mm]. The stainless steel corrugated ring consists of 1.4571 [partition 3.0 mm]. It has grooves on the inside and complies with Germany's Chemical Industry's specification. The gasket is mainly used in steel flange connections and allows high pressure-temperature combinations. Complies with TA Luft and VDI 2290[1]
OPERATIONAL DATA	
Pressure	Max. 40 bar
Temperature	-200 °C to 200 °C [for short peaks at 230 °C]
APPROVALS	
TA Luft 2002 [VDI 2440/2200]	**x**
BAM oxygen	
BAM EO/PO [Ethylene-/Propylene oxide]	
DVGW [DIN 3535-6]	
KTW-guideline	
Fire Safe Test	
FDA	**x***
EG 1935/2004	
Blow-out resistance	**x**
Germanischer Lloyd	
Features	Conductive design possible

[1] Complies with VDI 2290 only in combination with a leakage certificate as per EN 1591-1 | *for additional information refer to approvals overview

ENVELOPE GASKETS.

Product Name	Envelope gasket with diffusion barrier and aramid fiber insert	Envelope gasket with diffusion barrier and SIGRAFLEX® EMAIL graphite insert	Envelope gasket with diffusion barrier and UNIFLUOR® PTFE insert
Product name	WS 7110/3822	WS 7110/3825	WS 7110/7550
Product image			
Profile No.	ED10 	ED10 	ED10 
Features	The PTFE-envelope of the sealing system consists of Dyneon™ TFM™ 1600 and has an interior diffusion barrier [3.0 mm]. The aramid fiber insert is 3.0 mm. Leading enamel flange manufacturers recommend this gasket up to nominal width DN 200, exceeding that width the profile ED30 with a thickness of 6.5 mm.	The PTFE-envelope of the sealing system consists of Dyneon™ TFM™ 1600 and has an interior diffusion barrier [3.0 mm]. The SIGRAFLEX® EMAIL insert is 3.0 mm. Leading enamel flange manufacturers recommend this gasket up to nominal width DN 200, exceeding that width the profile ED30 with a thickness of 6.5 mm. Complies with TA Luft and VDI 2290[1].	The PTFE-envelope of the sealing system consists of Dyneon™ TFM™ 1600 and has an interior diffusion barrier [3.0 mm]. UNIFLUOR® WS 7550 insert is 3.0 mm thick. All materials in this combination gasket are FDA-conform. Complies with TA Luft and VDI 2290[1].
OPERATIONAL DATA			
Pressure	Max. 20 bar[2]	Max. 20 bar[2]	Max. 20 bar[2]
Temperature	-50 °C to 150 °C [continuous use 100 °C]	-200 °C to 200 °C [short term 230 °C]	-200 °C to 150 °C [short term 230 °C]
APPROVALS			
TA Luft 2002 [VDI 2440/2200]	X	X	X
BAM oxygen			
BAM EO/PO [Ethylene-/Propylene oxide]			
DVGW [DIN 3535-6]			
KTW-guideline			
Fire Safe Test			
FDA	X*	X*	X*
EG 1935/2004			
Blow-out resistance			
Germanischer Lloyd			
Features	Conductive design possible	Conductive design possible	Conductive design possible

[1] Complies with VDI 2290 only in combination with a leakage certificate as per EN 1591-1 | [2] max. pressure and max. temperature should not occur at the same time
*for additional information refer to approvals overview

Product Name	**Envelope gasket with diffusion barrier, corrugated metal ring and two aramid fiber inserts**	**Envelope gasket with diffusion barrier, corrugated metal ring and two SIGRAFLEX® EMAIL graphite insert**	**Envelope gasket with diffusion barrier, corrugated metal ring and two UNIFLUOR® PTFE inserts**
Product name	**WS 7110/1.4571/3822**	**WS 7110/1.4571/3825**	**WS 7110/1.4571/7550**
Product image			
Profile No.	ED30 	ED30 	ED30 
Features	The PTFE-envelope consists of Dyneon™ TFM™ 1600 and has an interior diffusion barrier [3.0 mm]. A corrugated ring [1.4571] and two aramid fiber inserts [each 2.0 mm thick] are used. This gasket is preferably used in enamel applications, for chemically aggressive media, high purity requirements and for FDA-applications.	The PTFE-envelope consists of Dyneon™ TFM™ 1600 and has an interior diffusion barrier [3.0 mm]. A corrugated ring [1.4571] with two graphite inserts made from SIGRAFLEX® EMAIL [each 2.0 mm] are used. The gasket is suitable for highly corrosive media, high purity requirements, FDA-applications and for stress and bend sensitive flanges. Complies with TA Luft and VDI 2290[1].	The PTFE-envelope of the sealing system consists of Dyneon™ TFM™ 1600 and has an interior diffusion barrier [3.0 mm]. A corrugated ring [1.4571] with two PTFE-inserts made from UNIFLOUR® WS 7550 [each 2.0 mm] are used. All materials in this combination gasket are FDA-conform. Complies with TA Luft and VDI 2290[1].
OPERATIONAL DATA			
Pressure	Max. 20 bar[2]	Max. 40 bar[2]	Max. 20 bar[2]
Temperature	-50 °C to 150 °C [continuous use max. 100 °C]	-200 °C to 200 °C [short term 230 °C]	-200 °C to 150 °C [short term 230 °C]
APPROVALS			
TA Luft 2002 [VDI 2440/2200]	**X**	**X**	**X**
BAM oxygen			
BAM EO/PO [Ethylene-/Propylene oxide]			
DVGW [DIN 3535-6]			
KTW-guideline			
Fire Safe Test		**X**	
FDA	**X***	**X***	**X***
EG 1935/2004			
Blow-out resistance		**X**	
Germanischer Lloyd			
Features	Conductive design possible	Conductive design possible	Conductive design possible

[1] Complies with VDI 2290 only in combination with a leakage certificate as per EN 1591-1 | [2] max. pressure and max. temperature should not occur at the same time
*for additional information refer to approvals overview