

**FLAGON TPO**



# FLAGON EP/PV

**ROOFING SYNTHETIC MEMBRANES**

**TPO** +Plus



**SOPREMA GROUP**



1085 CPD 0011



# FLAGON EP/PV

www.flag.it

## COMPOSITION

Synthetic liner of TPO modified polyolefin, in two-colour version (sand grey/black), obtained by co-extrusion, which allows to produce in a single layer a liner with different physical-chemical properties on the two sides by inserting a glass gauze as dimensional stabiliser.

The upper sand grey layer is characterised by very high resistance to weathering and ultraviolet rays, whereas the lower black layer is resistant to puncturing and ultraviolet rays.

Manufactured in UNI EN ISO 9001:2000 (Quality System) and UNI EN ISO 14001:2004 (Environmental System) certified plant. Laying by installers approved by Flag S.p.A. Finishing and accessories with elements manufactured and approved by Flag S.p.A.

## FEATURES

- Resistance to weathering and ultraviolet rays.
- Dimensional stability
- Will not rot
- Mechanical and puncturing resistance

- Adaptability to structural movements
- Flexibility to low temperatures
- Excellent weldability

## AREA OF USE

### ROOFING

- Movable Ballast System:
  - horizontal surfaces without pedestrian traffic ballasted by gravel
  - horizontal surfaces with pedestrian traffic ballasted by prefabricated square concrete slabs
  - inverted roof
  - sandwich roof
  - vertical details
- Rigid Ballast System:
  - pedestrian roof
  - trafficked roof
  - roof-garden

## PHYSICAL-CHEMICAL PROPERTIES

		FLAGON EP/PV 120	FLAGON EP/PV 150	FLAGON EP/PV 180	FLAGON EP/PV 200	FLAGON EP/PV 250	Testing method
Thickness	(mm)	1,2	1,5	1,8	2,0	2,5	UNI EN 1849 - 2
Weight	(Kg/m <sup>2</sup> )	1,15	1,40	1,68	1,85	2,32	UNI EN 1849 - 2
Tensile strength (rectangular test specimen)	(N/mm <sup>2</sup> )	≥ 9,0	≥ 9,0	≥ 9,0	≥ 9,0	≥ 9,0	UNI EN 12311 - 2
Elongation to break (rectangular test specimen)	(%)	≥ 550	≥ 550	≥ 550	≥ 550	≥ 550	UNI EN 12311 - 2
Tear resistance	(N)	≥ 130	≥ 165	≥ 195	≥ 220	≥ 260	UNI EN 12310 - 2
Resistance to impact	(mm)	≥ 400	≥ 700	≥ 900	≥ 1150	≥ 1650	UNI EN 12691
Cold bending	(°C)	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 495 - 5
Hydrostatic pressure resistance (6 hours at 0,5 MPa)		waterproof	waterproof	waterproof	waterproof	waterproof	UNI EN 1928 meth. B
Dimensional stability after 6 hours at 80°C	(%)	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1	UNI EN 1107 - 2
Resistance to artificial weathering		no cracking	no cracking	no cracking	no cracking	no cracking	UNI EN 1297
Root resistance		no penetration	no penetration	no penetration	no penetration	no penetration	EN 13948
Resistance to hail on rigid substrate	(m/s)	≥ 25	≥ 25	≥ 25	≥ 25	≥ 25	UNI EN 13583
Thermal ageing in air after 168 d at 70°C Cold bending (°C)		≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 1296
Peel resistance of joints	(N/50 mm)	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	UNI EN 12316 - 2
Shear resistance of joints		breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	UNI EN 12317 - 2
Resistance to static punching	(kg)	≥ 20	≥ 20	≥ 20	≥ 20	≥ 20	UNI EN 12730

## PRODUCTION STANDARD

Thickness	1,2 mm	1,5 mm	1,8 mm	2,0 mm	2,5 mm
Width	2,10 m	2,10 m	2,10 m	2,10 m	2,10 m
Length	25 m	20 m	20 m	20 m	20 m
Colour	Sand grey / black				

## ACCESSORIES SYSTEM

- FLAGON TPO for detail work (FLAGON EP/S)
- Prefabricated accessories (corners, rain water outlet ecc.)
- FLAGON TPO CLEANER
- FLEXOCOL TPO (for vertical surface)
- TPO Flagmetal sheet - perimeter profile - termination strip - strip

Due to its formulation, the liner is NOT subject to the requirements set forth in the EEC 79/831 regulation on dangerous substances. If the product should be disposed of as waste, we recommend sending it to an authorised landfill site or to an incinerator equipped with post-combustion chamber and fume washing system.



Flag S.p.A. - via Industriale dell'Isola, 3 - 24040 Chignolo D'Isola (Bergamo) - Italy - T. +39.035.494.09.49 - F. +39.035.494.06.49 - e-mail: info@flag.it

Flag Soprema UK Ltd. - Marlborough House, Beacon Hill Road - Beacon Hill - Surrey GU26 6QL - T. +44.1428.604.500 - F. +44.1428.606.898 - e-mail: tony.mellon@flaguk.co.uk

**FLAGON TPO**



# FLAGON EP/PR

**ROOFING SYNTHETIC MEMBRANES**





1085 CPD 0011



SNPE

TPO<sup>+Plus</sup>

# FLAGON EP/PR

[www.flag.it](http://www.flag.it)

## COMPOSITION

Synthetic liner of TPO modified polyolefin, in two-colour version (sand grey/black), obtained by co-extrusion, by inserting a polyester mesh. The upper sand grey layer, which is exposed, is characterised by very high resistance to weathering and ultraviolet rays, whereas the lower black layer is resistant to puncturing and ultraviolet rays. Manufactured in UNI EN ISO 9001:2000 (Quality System) and UNI EN ISO 14001:2004 (Environmental System) certified plant. Laying by installers approved by Flag S.p.A. Finishing and accessories with elements manufactured and approved by Flag S.p.A.

## FEATURES

- Resistance to weathering and ultraviolet rays.
- Resistance to wind stress
- Will not rot
- Mechanical and puncturing resistance
- Adaptability to structural movements
- Flexibility to low temperatures
- Excellent weldability

## AREA OF USE

### ROOFING

- Mechanical fastening system
  - mechanical fixing

## PHYSICAL-CHEMICAL PROPERTIES

	FLAGON EP/PR 120	FLAGON EP/PR 150	FLAGON EP/PR 180	FLAGON EP/PR 200	FLAGON EP/PR 250	Testing method
Thickness (mm)	1,2	1,5	1,8	2,0	2,5	UNI EN 1849 - 2
Weight (Kg/m <sup>2</sup> )	1,15	1,40	1,68	1,85	2,32	UNI EN 1849 - 2
Tensile strenght (rectangular test specimen) (N/5cm)	≥ 1100	≥ 1100	≥ 1100	≥ 1100	≥ 1100	UNI EN 12311 - 2
Elongation to break (rectangular test specimen) (%)	≥ 15	≥ 15	≥ 15	≥ 15	≥ 15	UNI EN 12311 - 2
Tear resistance (N)	≥ 300	≥ 300	≥ 300	≥ 300	≥ 300	UNI EN 12310 - 2
Resistance to impact (mm)	≥ 400	≥ 700	≥ 900	≥ 1150	≥ 1650	UNI EN 12691
Cold bending (°C)	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 495 - 5
Hydrostatic pressure resistance (6 hours at 0,5 MPa)	waterproof	waterproof	waterproof	waterproof	waterproof	UNI EN 1928 MET. B
Dimensional stability after 6 hours at 80°C (%)	≤ ± 0,5	≤ ± 0,5	≤ ± 0,5	≤ ± 0,5	≤ ± 0,5	UNI EN 1107 - 2
Resistance to artificial weathering	no cracking	no cracking	no cracking	no cracking	no cracking	UNI EN 1297
Root resistance	no penetration	no penetration	no penetration	no penetration	no penetration	UNI EN 13948
Resistance to hail on rigid substrate (m/s)	≥ 25	≥ 25	≥ 25	≥ 25	≥ 25	UNI EN 13583
Thermal ageing in air after 168 d at 70°C Cold bending (°C)	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 1296
Peel resistance of joints (N/50 mm)	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	UNI EN 12316 - 2
Shear resistance of joints	breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	UNI EN 12317 - 2
Resistance to impact (mm)	10	10	10	10	10	
Resistance to static punching (kg)	≥ 20	≥ 20	≥ 20	≥ 20	≥ 20	UNI EN 12730

## PRODUCTION STANDARD

Thickness	1,2 mm	1,5 mm	1,8 mm	2,0 mm	2,5 mm
Width	2,10 m	2,10 m	2,10 m	2,10 m	2,10 m
Length	25 m	20 m	20 m	20 m	20 m
Colour	Sand grey / black				

## ACCESSORIES SYSTEM

- FLAGON TPO for detail work (FLAGON EP/S)
- Prefabricated accessories (corners, rain water outlet ecc.)
- FLAGON TPO cleaner
- FLEXOCOL TPO (for vertical surface)
- TPO Flagmetal sheet - perimeter profile - termination strip - strip

Due to its formulation, the liner is NOT subject to the requirements set forth in the EEC 79/831 regulation on dangerous substances. If the product should be disposed of as waste, we recommend sending it to an authorised landfill site or to an incinerator equipped with post-combustion chamber and fume washing system.



SOPREMA GROUP

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**FLAGON TPO**



# FLAGON EP/PR-F

**ROOFING SYNTHETIC MEMBRANES**



**SOPREMA GROUP**



1085 CPD 0011



# FLAGON EP/PR-F

[www.flag.it](http://www.flag.it)



SNPE



## DESCRIPTION

Synthetic liner of TPO modified polyolefin obtained by co-extrusion, by inserting a polyester mesh and a 200 g/m<sup>2</sup> polyester fleece backing.

The upper sand grey layer, which is exposed, is characterised by very high resistance to weathering and ultraviolet rays.

Manufactured in UNI EN ISO 9001:2000 (Quality System) and UNI EN ISO 14001:2004 (Environmental System) certified plant.

Laying by installers approved by Flag S.p.A.

Finishing and accessories with elements manufactured and approved by Flag S.p.A.

## FEATURES

- Resistance to weathering and ultraviolet rays
- Resistance to wind stress

- Will not rot
- Mechanical and puncturing resistance
- Adaptability to structural movements
- Flexibility to low temperatures
- Excellent weldability
- High environmental compatibility
- No-toxic

## AREA OF USE

### ROOFING

- Mechanical fastening system
  - mechanical fixing on incompatible substratum

## PHYSICAL-CHEMICAL PROPERTIES

	FLAGON EP/PR F 120	FLAGON EP/PR F150	FLAGON EP/PR F180	FLAGON EP/PR F 200	FLAGON EP/PR F 250	Testing method
Thickness (mm)	1,2	1,5	1,8	2,0	2,5	UNI EN 1849 - 2
Weight (Kg/m <sup>2</sup> )	1,35	1,60	1,88	2,05	2,52	UNI EN 1849 - 2
Tensile strenght (N/5 cm)	≥ 1100	≥ 1100	≥ 1100	≥ 1100	≥ 1100	UNI EN 12311 - 2
Elongation to break (%)	≥ 15	≥ 15	≥ 15	≥ 15	≥ 15	UNI EN 12311 - 2
Tear resistance (N)	≥ 300	≥ 300	≥ 300	≥ 300	≥ 300	UNI EN 12310 - 2
Resistance to impact (mm)	≥ 400	≥ 700	≥ 900	≥ 1150	≥ 1650	UNI EN 12691
Cold bending (°C)	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 495 - 5
Resistance to artificial weathering	no cracking	no cracking	no cracking	no cracking	no cracking	UNI EN 1297
Hydrostatic pressure resistance (6 hours at 0,5 Mpa)	waterproof	waterproof	waterproof	waterproof	waterproof	UNI EN 1928 meth. B
Dimensional stability after 6 hours at 80°C (%)	≤ ± 0,5 %	≤ ± 0,5 %	≤ ± 0,5 %	≤ ± 0,5 %	≤ ± 0,5 %	UNI EN 1107 - 2
Resistance to hail on rigid substrate (m/s)	≥ 25	≥ 25	≥ 25	≥ 25	≥ 25	UNI EN 13583
Root resistance	no penetration	no penetration	no penetration	no penetration	no penetration	UNI EN 13948
Thermal ageing in air after 168 d at 70°C	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 1296
Cold bending (°C)	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	
Peel resistance of joints (N/50 mm)	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	UNI EN 12316 - 2
Shear resistance of joints	breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	UNI EN 12317 - 2
Resistance to static punching (kg)	≥ 20	≥ 20	≥ 20	≥ 20	≥ 20	UNI EN 12730

## PRODUCTION STANDARD

Thickness	1,2 mm	1,5 mm	1,8 mm	2,0 mm	2,5 mm
Width	2,10 m	2,10 m	2,10 m	2,10 m	2,10 m
Length	25 m	20 m	20 m	20 m	20 m
Colour	Sand grey				

## ACCESSORIES SYSTEM

- FLAGON TPO for detail work (FLAGON EP/S)
- Prefabricated accessories (corners, rain water outlet ecc.)
- FLAGON TPO CLEANER
- FLEXOCOL TPO (for vertical surface)
- TPO Flagmetal sheet - perimeter profile - termination strip - strip

Due to its formulation, the liner is NOT subject to the requirements set forth in the EEC 79/831 regulation on dangerous substances. If the product should be disposed of as waste, we recommend sending it to an authorised landfill site or to an incinerator equipped with post-combustion chamber and fume washing system.

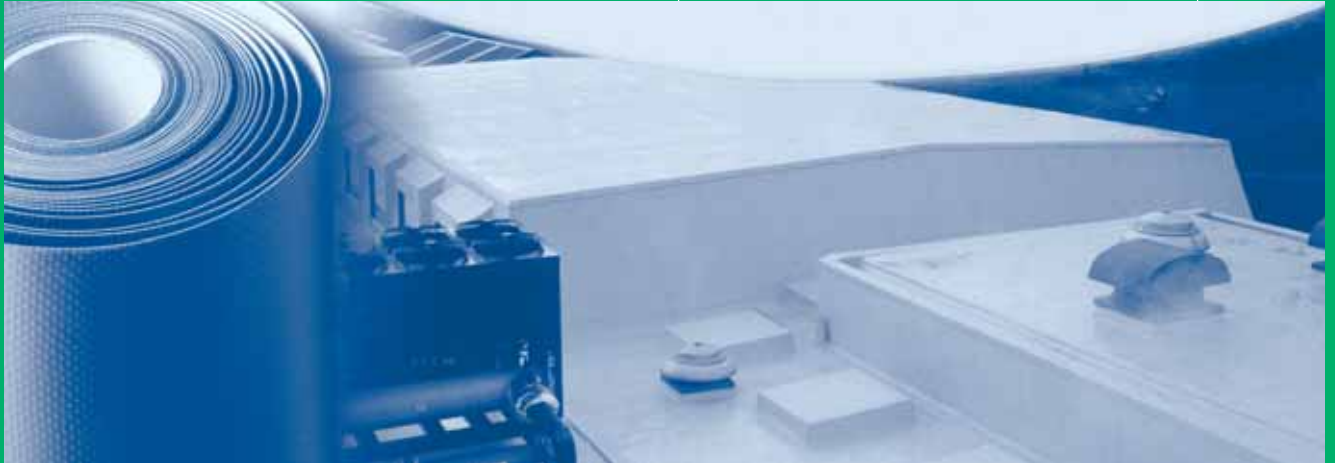


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**FLAGON TPO**



# FLAGON EP/PV-F

**ROOFING SYNTHETIC MEMBRANES**

**TPO** +Plus



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**DESCRIPTION**

Synthetic liner of TPO modified polyolefin obtained by co-extrusion, by inserting a glass fibre and a 200 g/m<sup>2</sup> polyester fleece backing. The upper sand grey layer, which is exposed, is characterised by very high resistance to weathering and ultraviolet rays.

Manufactured in UNI EN ISO 9001:2000 (Quality System) and UNI EN ISO 14001:2004 (Environmental System) certified plant.

Laying by installers approved by Flag S.p.A. Finishing and accessories with elements manufactured and approved by Flag S.p.A.

**FEATURES**

- Resistance to weathering and ultraviolet rays
- Resistance to wind stress
- Will not rot
- Mechanical and puncturing resistance

- Adaptability to structural movements
- Flexibility to low temperatures
- Excellent weldability
- High environmental compability
- No-toxic

**AREA OF USE****ROOFING**

- Mechanical fastening system:
  - vertical details
- Fully Adhered system:
  - fully adhered on insulation boards
  - fully adhered on traditional reinforced-concrete slab
  - refurbishment bitumen

**PHYSICAL-CHEMICAL PROPERTIES**

		FLAGON EP/PV F 120	FLAGON EP/PV F150	FLAGON EP/PV F180	FLAGON EP/PV F 200	FLAGON EP/PV F 250	Testing method
Thickness	(mm)	1,2	1,5	1,8	2,0	2,5	UNI EN 1849 - 2
Weight	(Kg/m <sup>2</sup> )	1,35	1,60	1,88	2,05	2,52	UNI EN 1849 - 2
Tensile strenght	(N/5 cm)	≥ 550	≥ 650	≥ 800	≥ 850	≥ 1050	UNI EN 12311 - 2
Elongation to break	(%)	≥ 130	≥ 130	≥ 130	≥ 130	≥ 130	UNI EN 12311 - 2
Tear resistance	(mm)	≥ 200	≥ 250	≥ 300	≥ 340	≥ 400	UNI EN 12310 - 2
Resistance to impact	(mm)	≥ 400	≥ 700	≥ 900	≥ 1150	≥ 1650	UNI EN 12691
Cold bending	(°C)	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 495 - 5
Resistance to artificial weathering		no cracking	no cracking	no cracking	no cracking	no cracking	UNI EN 1297
Hydrostatic pressure resistance (6 hours at 0,5 Mpa)		waterproof	waterproof	waterproof	waterproof	waterproof	UNI EN 1928 meth. B
Dimentional stability after 6 hours at 80°C	(%)	≤ ± 0,1 %	≤ ± 0,1 %	≤ ± 0,1 %	≤ ± 0,1 %	≤ ± 0,1 %	UNI EN 1107 - 2
Resistance to hail on rigid substrate	(m/s)	≥ 25	≥ 25	≥ 25	≥ 25	≥ 25	UNI EN 13583
Root resistance		no penetration	no penetration	no penetration	no penetration	nopenetration	UNI EN 13948
Thermal ageing in air after 168 d at 70°C		≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	UNI EN 1296
Cold bending	(°C)	≤ - 40	≤ - 40	≤ - 40	≤ - 40	≤ - 40	
Peel resistance of joints	(N/50 mm)	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	UNI EN 12316 - 2
Shear resistance of joints		breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	breaking out of joint	UNI EN 12317 - 2
Resistance to static punching	(kg)	≥ 20	≥ 20	≥ 20	≥ 20	≥ 20	UNI EN 12730

**PRODUCTION STANDARD**

Thickness	1,2 mm	1,5 mm	1,8 mm	2,0 mm	2,5 mm
Width	2,10 m	2,10 m	2,10 m	2,10 m	2,10 m
Length	25 m	20 m	20 m	20 m	20 m
Colour	Sand grey				

**ACCESSORIES SYSTEM**

- FLEXOCOL A89 / FLEXOCOL W (for UK market)
- FLAGON TPO for detail work (FLAGON EP/S)
- Prefabricated accessories (corners, rain water outlet ecc.)
- FLAGON TPO CLEANER
- FLEXOCOL TPO (for vertical surface)
- TPO Flagmetal sheet - perimeter profile - termination strip - strip

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