

**PARAGUM ST**



**Product description**

PARAGUM ST prefabricated waterproofing membranes are produced by co-extruding a bitumen-polymer elastoplastic compound, based on metallocene resins, derived from the special compound Parallo (widely known for superior technical and performance characteristics), with a reinforcing mat consisting of non-woven continuous filament polyester fabric stabilized with glass fiber located midway through the membrane's thickness and acting in total synergy with it. Careful formulation and distribution of distilled bitumen and polymers ensure outstanding mechanical performance and aging resistance.

PARAGUM ST are produced in the following versions:

- **PARAGUM ST 3** and **PARAGUM ST 4**, with thicknesses of 3 and 4 mm respectively, and talc treated upper face which can be overcoated with compatible colored or metallizing protective paints, including Elastomul, Parwenol and Allabit.
- **PARAGUM ST ARD/S**, with a density of 4.5 kg/m<sup>2</sup> and upper face surfaced with natural gray, red or green slate chippings.
- **PARAGUM ST ARD/HS**, with thickness of 4 mm and upper face surfaced with natural gray, red or green slate chippings.

Lower face of all versions of PARAGUM ST membranes is coated with TERMOTENE film, which facilitates application and improves membrane adhesion to the substrate to be waterproofed.

Membranes are supplied in taped rolls, each accompanied by a Quality Control Certificate. They comply with CE marking requirements, and contain no asbestos, tar or other dangerous substances.

PARAGUM ST membranes have obtained "Agrément technique avec Certification" from UBAtc, member of the UEAtc – Union Européenne pour l'Agrément technique dans la construction.

**Recommended uses**

PARAGUM ST membranes are ideal for waterproofing applications of all kinds. For membrane versions to be used in roofing, foundation and below-grade applications, see the table below<sup>(1)</sup>.

For detailed documentation and guidance regarding product application, consult IMPER ITALIA srl Technical Services.

PRODUCT	USE <sup>(1)</sup>								
	Roofing (EN 13707)						Roofing underlay (EN 13859-1)	Vapor control (EN 13970)	Foundations (EN 13969)
	Exposed			Roof gardens	Under heavy-duty protection				
	Single-ply	Multi-play		Root resistant	Single-ply	Multi-play			Multi-play
Cap sheet		Base ply							
PARAGUM ST 3		•	•			•			•
PARAGUM ST 4	•	•	•		•	•			•
PARAGUM ST ARD/S		•					•		
PARAGUM ST ARD/HS	•	•					•		

(1) In compliance with applicable standards and AISPEC-MBP guidelines.

## Methods of application

Waterproofing performance will depend to a significant extent on application methods. Substrates must be thoroughly cleaned and treated with a suitable primer applied by brush, roller or spray at a rate of 0.2 to 0.3 liters/m<sup>2</sup>. Primer coverage will depend on substrate porosity. PARAGUM ST membranes are applied using a propane torch. Special care must be taken when welding, ensuring that plies are laid with staggered joints. Membrane must be laid to allow side laps of 8 to 10 cm and end laps of 12 to 15 cm. For detailed documentation and guidance in selecting the most appropriate procedures for any job, consult IMPER ITALIA srl Technical Services, who will be happy to provide assistance and advice in designing special waterproofing systems and helping you make the best use of these materials.

SPECIFICATIONS							
Properties	EN standards	Unit of measure	Tolerances <sup>(2)</sup>	PARAGUM ST			
				3	4	ARD/S	ARD/HS
Roll dimensions	1848-1	m	≥	10 x 1 (-1%)			
Thickness	1849-1	mm	±5%	3	4	-	4 + ARD
Mass	1849-1	kg/m <sup>2</sup>	±10%	-	-	4.5	-
Colore standard	-	-	-	Black	Black	Natural gray <sup>(*)</sup>	Natural gray <sup>(*)</sup>
Watertightness	1928-B	kPa	≥	60			
Cold flexibility	1109	°C	≤	-15			
Hot creep	1110	°C	≥	120			
Tensile strength (L/T)	12311-1	N/5cm	±20%	750/650			
Tensile elongation (L/T)	12311-1	%	±15	50/50			
Dimensional stability (L/T)	1107-1	%	≤	0.3			
Puncture resistance - Static indentation	12730	kg	≥	25			
Puncture resistance - Dynamic indentation	12691-B	mm	≥	1000			
Tear resistance (L/T)	12310-1	N	±30%	160/180			
Joint peel resistance	12316-1	N/5cm	±20	60			
Joint cut resistance	12317-1	N/5cm	±20%	650/550 <sup>(3)</sup>			
<b>Durability after aging:</b>							
• Cold flexibility	1296-1109	°C	+15°C	-5			
• Hot creep	1296-1110	°C	-10°C	+120			
• UV weathering exposure	1297	-	-	Test passes			
• Watertightness	1296-1928	kPa	≥	60			
• Chemical resistance	-	-	-	NPD <sup>(4)</sup>			
• Tensile strength (L/T)	12311-1	N/5cm	±20%	750/650			
• Tensile elongation (L/T)	12311-1	%	±15	50/50			
Water vapor permeability	1931	μ	≥	20,000			
Root resistance	LG Aispec		-	NPD <sup>(4)</sup>			
Fire resistance	13501-5	EC <sup>(5)</sup>	-	F Roof			
Fire reaction rating	13501-1	EC <sup>(5)</sup>	-	F			

**Notes:** (2) In compliance with applicable standards and AISPEC-MBP guidelines.

(3) Or failure away from joints.

(4) Not determined, because not relevant for application.

(5) Euroclass.

(\*) N.G. = Natural green. Other colors on request: Red, Green.

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