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POLITABER POL PY 30 + POLITABER POL PY 30
POLITABER POL PY 30 + POLITABER COMBI 40/G
ROOF WATERPROOFING COATINGS

ROOF WATERPROOFING
IMPERMEABILIZAÇÃO DE COBERTURAS
ÉTANCHÉITÉ DE TOITURES

OCTOBER 2024

This Documento de Aplicação (Application Document) is an English translation of DA 147 from October 2024 (original version in Portuguese). The validity status of this Application Document should be verified at www.lnec.pt.

This Application Document (Documento de Aplicação), issued on a voluntary basis, defines the characteristics of the waterproofing sheets POLITABER POL PY 30 and POLITABER COMBI 40/G, produced by ASFALTOS CHOVA, S.A.U. It also establishes the conditions for the installation and use of the two-layer roof waterproofing coatings, POLITABER POL PY 30 + POLITABER POL PY 30 and POLITABER POL PY 30 + POLITABER COMBI 40/G.

The National Laboratory for Civil Engineering (LNEC) issues a favourable technical opinion for the roof waterproofing coatings made with these sheets provided the following conditions are met:

- the company ASFALTOS CHOVA, S.A.U. ensures the consistency of the production conditions that allow the CE marking to be applied to the sheets, specifically through proper production control in the factory, as summarized in section 3;
- the field of application for the waterproofing coatings complies with the instructions provided in section 2;
- the installation, maintenance, and repair of the waterproofing coatings on-site follow the instructions provided in sections 5 and 6.

This Application Document is valid until October 31, 2027, and may be renewed upon a timely request to LNEC.

LNEC reserves the right to suspend or revoke this Application Document if circumstances arise that warrant such action, particularly in the event of any issue that undermines the consistency of product quality.

Lisbon and National Laboratory for Civil Engineering, October 2024

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1 COATINGS DESCRIPTION

1.1 General description

The black POLITABER POL PY 30 and POLITABER COMBI 40/G are made of bitumen modified with polymers containing elastomeric resins based on styrene-butadiene-styrene (SBS) and incorporate a non-woven polyester felt reinforcement. These sheets are intended for use in two-layer roof waterproofing coatings, formed sequentially by the following sheets:

- POLITABER POL PY 30 + POLITABER POL PY 30;
- POLITABER POL PY 30 + POLITABER COMBI 40/G.

The POLITABER POL PY 30, with a polyester felt reinforcement, is produced in pieces measuring 12 m in length and 1.0 m in width, with a mass per unit area of 3.0 kg/m^2. On the other hand, the POLITABER COMBI 40/G sheet, also with a polyester felt reinforcement, is produced in pieces measuring 10 m in length and 1.0 m in width, with a mass per unit area of 4.0 kg/m^2.

The POLITABER POL PY 30 + POLITABER POL PY 30 roof waterproofing coating can be applied in adhered, semi-adhered or independent systems from the substrate. The POLITABER POL PY 30 + POLITABER COMBI 40/G coating should only be applied in adhered or semi-adhered systems from the substrate.

During the application of these coatings on-site, the following complementary products manufactured or marketed by ASFALTOS CHOVA may also be used: SUPERMUL bitumen primer, ChovASTAR MASTIC bitumen cord, separation layers, and vapour control layers.

The sheets, when used as indicated above, are CE marked and accompanied by the information required in Annex ZA of the European Standard EN 13707:2013 – *Flexible sheets for waterproofing – Reinforced bitumen sheets for roof waterproofing – Definitions and characteristics*.

1.2 Constitution and characterisation

1.2.1 Bitumen-modified sheets

POLITABER POL PY 30 and POLITABER COMBI 40/G sheets are produced by coating both sides of the polyester reinforcement with a mixture composed essentially of bitumen, SBS resins and calcium carbonate mineral fillers.

The POLITABER POL PY 30 sheet is finished with polyethylene films on both the upper and the lower faces, whereas the POLITABER COMBI 40/G sheet is finished with a mineral granulate on the upper face and a polyethylene film on the lower face.

Table 1 presents the characteristics of the sheets in relation to their CE marking.

1.2.2 Other products

1.2.2.1 SUPERMUL bitumen primer

The SUPERMUL product is a primer designed for the surface impregnation of concrete or mortar substrates. It consists of an anionic bitumen emulsion with mineral fillers and contains approximately 40% to 50% water.

1.2.2.2 ChovASTAR MASTIC bitumen cord

ChovASTAR MASTIC is a pre-moulded bitumen cord designed for *in situ* application in expansion joints. It is composed of asphaltic bitumen, resins, mineral fibres, and elastomers.

1.2.2.3 Separation layers

The separation of waterproofing coatings from the substrate (independent system) can be achieved by applying one of the following products: kraft paper, silicone paper, fiberglass felt, or geotextile blankets.

1.2.2.4 Vapour control layers

Bitumen-based vapour control layers (felts or sheets) with a minimum of 1.8 kg/m^2 mass per unit area may also be used, provided they are CE marked in accordance with European standard EN 13970:2004.

2 FIELD OF APPLICATION

As previously mentioned, the roof waterproofing coating POLITABER POL PY 30 + POLITABER POL PY 30 can be applied using adherent, semi-adherent or independent systems from the substrate. On the other hand, the POLITABER POL PY 30 + POLYTABER COMBI 40/G coating should only be applied using adherent or semi-adherent systems from the substrate. The choice for the most suitable solution depends on the substrate material, as well as on the roof slope and accessibility.

Table 2 provides a summary of the application field of the coatings mentioned above, and the following additional requirements must also be considered:

- the coatings should generally not be applied to substrates with a slope of less than 2% or more than 15%, except in special cases, such as finishing areas with emerging roof elements. In these cases, the coatings should always be applied using an adherent system;
- the coatings may also be applied to substrates other than those listed in Table 2, provided they meet the requirements for the specific application field and bear the CE marking;
- the POLITABER POL PY 30 + POLITABER POL PY 30 coating can be applied to substrates with a slope between 1% and 2%, provided it is applied using an adherent system;
- the POLITABER POL PY 30 + POLITABER POL PY 30 coating must only be applied under heavy protection (see 5.7);
- the POLITABER POL PY 30 + POLITABER POL PY 30 coating can be applied to 'inverted' roofs (thermal insulation placed over the waterproofing coating), in accordance with the application field summarised in table 2 for concrete and mortar substrates. In such cases, the recommendations outlined in the Approval Document or the European Technical Assessment for the respective thermal insulation systems must also be followed;

TABLE 1

Characteristics of bitumen sheets related to CE marking

Essential characteristics		Test method	Reporting of results	Values declared by the manufacturer
Performance to external fire		CEN/TS 1187:2012	Classes	B_{ROOF} (t1)
Reaction to fire		EN 13501-1:2002	Euroclasses	Class E
Water tightness		EN 1928:2000	Tight or not tight	Tight
Tensile properties	Maximum force	EN 12311-1:1999	MDV ± t (N)	700 ± 200 / 450 ± 150 (1)
	Elongation at maximum force		MDV ± t (%)	45 ± 15 / 45 ± 15 (1)
Resistance to root penetration		EN 13948:2007	Resistant or not resistant to root penetration	NPD
Resistance to static loading		EN 12730:2001	MLV (kg)	Load that has not caused leakage ≤ 15 kg
Resistance to impact		EN 12691:2006	MLV (mm)	No leakage for fall heights ≤ 900 mm (2) or 1000 mm (3)
Resistance to tearing		EN 12310-1:1999	MDV ± t (N)	220 ± 40 (2) NPD (3)
Shear resistance of joints		EN 12317-1:1999	MDV ± t (N)	450 ± 150 (2) NPD (3)
Durability (influence of temperature)(4)	Flexibility at low temperature	EN 1296:2001 EN 1109:1999	MDV ± t (°C)	– 5 ± 5 °C
	Flow resistance at elevated temperature	EN 1296:2001 EN 1110:1999	MDV ± t (°C)	100 ± 10 (flow ≤ 2 mm)
Flexibility to bending		EN 1109:1999	MLV (°C)	No cracking for temperatures ≥ – 15 °C
Flow resistance at elevated temperatures		EN 1110:1999	MLV (°C)	No flow for temperatures ≤ 100 °C
Hazardous substances		–	Existence or not of hazardous products	NPD

MDV ± t manufacturer's declared value with correspondent tolerance t
MLV limit value (inferior or superior) declared by the manufacturer
NPD no performance declared
1 Values for the longitudinal and transverse direction of the sheets, respectively
2 Applicable to the POLITABER POL PY 30 sheet
3 Applicable to the POLITABER COMBI 40/G sheet
4 Applicable to the POLITABER COMBI 40/G sheet of the coating with light protection

TABLE 2

Summary of the field of application of the waterproofing coatings

Waterproofing coatings	Substrate		Application system					
			Independent	Semi-adherent		Adherent		
			2% ≤ i ≤ 5%	2% ≤ i ≤ 5%	5% < i ≤ 15%	1% < i ≤ 2%	2% ≤ i ≤ 5%	5% < i ≤ 15%
POLITABER POL PY 30 + POLITABER POL PY 30	Concrete and mortar	Monolithic	•	•		•	•	
		Segmented	•	•				
	Expanded cork agglomerate		•	•		•	•	
POLITABER POL PY 30 + POLITABER COMBI 40/G	Concrete and mortar	Monolithic		•	•		•	•
		Segmented		•	•			
	Expanded cork agglomerate			•	•		•	•

i slope of the roof waterproofing substrate

- both coatings can be applied to flat roofs with limited accessibility (accessible only for maintenance and/or repair work). The POLITABER POL PY 30 + POLITABER POL PY 30 coating can also be used on roofs that are accessible to both people and vehicles.

Finally, it should also be noted that the sheets under evaluation are classified as class E for fire reaction (Table 1). However, when applied under heavy protection, there are no fire safety restrictions on the use of the coatings.

3 PRODUCTION AND QUALITY CONTROL

The manufacturing facilities of ASFALTOS CHOVA, S.A.U. are located in Tavernes de la Valldigna (Valencia), Spain, covering a total area of approximately 65,000 m2, of which 18,000 m2 are covered.

The Quality Management System of ASFALTOS CHOVA is certified according to the EN ISO 9001:2015 standard. The company conducts quality control throughout the production of POLITABER POL PY 30 and POLITABER COMBI 40/G sheets, covering raw materials, products in process, and finished products.

The company's quality control includes recording the results of conducted tests and is subject to periodic external audits. A list of the tests and inspections, along with their frequency, performed by the company as part of the factory production control is attached.

Regarding products purchased from third-party suppliers, quality control is conducted at the respective production units, with ASFALTOS CHOVA receiving declarations from each supplier confirming that the delivered batches meet the specifications outlined in their respective technical data sheets. Additionally, the packaging of the delivered products is properly labelled with the commercial name, batch number, and product reference.

Purchased and finished products are stored in the factory's covered facilities. Rolls of POLITABER POL PY 30 and POLITABER COMBI 40/G sheets are stored upright and protected with a shrink-wrapped plastic film.

The manufacturing conditions of the coatings, the corresponding production control in the factory, the documental control related to products purchased from other manufacturers, as well as the storage conditions were assessed by LNEC, which concluded that they are adequate. These conditions must be maintained to ensure the consistency of the characteristics of the coatings covered by this Application Document.

4 COMMERCIAL PRESENTATION

POLITABER POL PY 30 and POLITABER COMBI 40/G sheets are sold in 1.0 m wide and 10 m or 12 m long rolls (see 1.1). Each roll is labelled with the following information: commercial name, product reference, batch identification, date of manufacture, CE marking, the name and contact details of the manufacturing company, and other sheet characteristics (reinforcement type, width, length and mass per unit area).

SUPERMUL bitumen primer is available in 5 kg and 25 kg packages. Each package is labelled with the following information: commercial name, identification of the manufacturing company, and package capacity.

Sheets placed on the market bear the CE marking, along with the information included in Annex ZA of standard EN 13707:2013. The company provides the corresponding declaration of performance upon request. Additionally, the sheets have an Environmental Product Declaration, in accordance with ISO 14025:2006 and EN 15804:2012+A1:2013.

5 ON SITE APPLICATION

5.1 General recommendations

The waterproofing coatings can be applied in adhered, semi-adhered or independent systems from the substrate (see Table 2).

These coatings should not be applied to tar-based substrates unless a suitable separation layer is used. Additionally, the coatings must not be applied to substrates with stains from oils or products containing organic solvents.

When the thermal insulation layer serves as support for the waterproofing coating, a vapour control layer must be considered based on the expected indoor environmental conditions in the building, as well as on the hygrothermal properties of the various materials that constitute the roof. The choice of the vapour control layer solution can be made either by analytical methods or by referring to recommendations in relevant literature.

Waterproofing finishes with emerged or submerged roof elements must be handled with extra care during installation.

5.2 Atmospheric conditions

POLITABER POL PY 30 and POLITABER COMBI 40/G sheets shall not be applied in rainy, snowy, or heavily foggy conditions. Additionally, the sheets shall not be applied when the air temperature is below –5 °C.

During application, the sheets must be handled with care, particularly when the air temperature is below 5 °C.

5.3 Requirements to be fulfilled by substrates

The coatings shall be applied to dry, clean substrates, free from unevenness, bumps, and any construction residues, such as plaster, hydrocarbons, and oils.

The nominal slope of the roof should generally not be less than 2% to ensure adequate water drainage from its surface. When applying the POLITABER POL PY 30 + POLITABER POL PY 30 coating to roofs with lower slope (see Table 2), extra care must be taken in the installation and in ensuring proper water drainage from the surface.

When using lightweight concrete (such as light aggregate concrete or cellular concrete) to define the roof slope, it is essential to apply a levelling screed over the lightweight concrete layer.

Before applying the sheets, the alignment of the roof surface with the vertical facings should be rounded or chamfered to allow continuous adjustment of the sheets without sharp angles or bends (see 5.5).

5.4 Application process

5.4.1 Placement of rolls

The rolls should be unrolled without tension and aligned on the substrate so that they overlap both longitudinally and transversely along their respective edges, forming a band corresponding to the width of the overlap joint. This width should be no less than 0.10 m, which represents the actual band glued between the two sheets. The POLITABER COMBI 40/G sheet must always serve as the second layer of the coating, meaning it should always be applied over the POLITABER POL PY 30 sheet.

5.4.2 Bonding of the sheets

a) Bonding of the sheets at the joints

The bonding between the sheets is made along the overlapping joints specified in 5.4.1, covering their entire width, and is solely achieved through flame welding. The use of bitumen, glues, or other adhesives is not allowed.

Welding should be performed in such a way to allow a small amount of molten bitumen, produced by heating, to flow back through the edge of the longitudinal or transverse overlap joints.

In the transverse overlap joints of the POLITABER COMBI 40/G sheet, the upper surface of the sheet underneath should be preheated to allow the bituminous mixture to flow back the mineral granules.

The overlapping joints of the upper layer of the sheet should ideally be offset in relation to the corresponding joints of the lower layer.

b) Bonding of the sheets between the two layers

The sheets are bonded to each other – either on a flat surface or at the ends – using flame welding only.

c) Bonding of the sheets to the substrate

For semi-adherent or adherent coatings (see Table 2), the bonding of the first sheet to the substrate is made exclusively by flame welding.

5.4.3 Application of the coating in an independent system

Due to the need for heavy protection, the application of the POLITABER POL PY 30 + POLITABER POL PY 30 coating in an independent system from the substrate is limited to roofs with slopes not exceeding 5% (see Table 2). The POLITABER POL PY 30 + POLITABER COMBI 40/G coating should not be used in an independent system from the substrate.

To ensure better separation of the waterproofing coating from the substrate, it is recommended to apply a layer for this purpose. This separation layer should be made from a material that is not overly sensitive to the heat of the blowtorch flame, with fiberglass felts or similar materials being the ideal choices. Prior to applying the waterproofing coating, the rolls comprising the separation layer should be unrolled over the substrate, with a 0.10 m overlap at their edges. If such layer is not applied, the sheets may become bonded to the substrate. This can occur either along the overlap joints, due to the reflux of bitumen during the sheets bonding process, or over the entire roof area in the long term, particularly when the bituminous mixture may fluidify at high air temperatures. This is especially a concern for waterproofing coatings applied over insulating substrates.

In the emerging roof elements, the sheet finishing at the vertical wall is carried out in accordance with the instructions provided in 5.5.

The POLITABER POL PY 30 + POLITABER POL PY 30 coating is then covered with heavy protection, as defined in 5.7.1. If this coating is used on roofs accessible to people, the first of the heavy protection solutions listed in 5.7.1 should not be applied. If

the coating is used on roofs where motor vehicles may circulate, only the last two heavy protection solutions listed in 5.7.1 will be allowed.

5.4.4 Application of the coating in a semi-adherent system

Due to the need for heavy protection, the application of the POLITABER POL PY 30 + POLITABER POL PY 30 coating in a semi-adherent system from the substrate is only allowed on roofs with slopes not exceeding 5%. The application of the POLITABER POL PY 30 + POLITABER COMBI 40/G coating in a semi-adherent system is allowed on roofs with slopes not exceeding 15% (see Table 2).

Before applying the waterproofing coating to concrete or mortar substrates, the surface should be primed with SUPERMUL bitumen primer at a minimum application rate of 350 g/m^2.

The bonding of the first layer of the coating to the substrate is made at points or with regularly spaced bands using flame welding. The sheet of the second layer is fully adhered to the first, with its bonding being also achieved through flame welding.

The technique for bonding the sheets to the substrate should comply with the provisions in 5.4.5, and the joints between the sheets should be made according to the specifications in 5.4.2.

At the roof's emerging elements, the sheet finishing with the vertical wall is carried out in accordance with the instructions provided in 5.5.

The types of heavy protection used over the POLITABER POL PY 30 + POLITABER POL PY 30 coating are those specified in 5.7.1, with the same limitations outlined in 5.4.3.

5.4.5 Application of the coating in a total adherent system

Due to the need for heavy protection, the application of the POLITABER POL PY 30 + POLITABER POL PY 30 in a total adherent system to the substrate is only allowed on roofs with slopes not exceeding 5%. The application of the POLITABER POL PY 30 + POLITABER COMBI 40/G coating in an adherent system is allowed on roofs with slopes not exceeding 15% (see table 2).

Concrete or mortar substrates should be primed with SUPERMUL primer at a minimum application rate of 350 g/m^2.

On segmented concrete or mortar substrates, separation bands should be applied along the joints beforehand. These bands should be 0.20 m to 0.30 m wide and can be made of bituminous fiberglass felt with a mass per unit area of approximately 1.8 kg/m^2, POLITABER POL PY 30 sheets (or other sheets of the same type), or another material with similar characteristics. The separation bands are fixed to only one side of the joint: by flame welding when using POLITABER POL PY 30 sheet bands, or with hot bitumen when using bituminous felt bands.

Coatings consisting of two sheets, bonded to each other and to the substrate by flame welding, are applied on the prepared substrate.

This technique involves heating the bitumen sheet with a suitable torch until its lower surface becomes fluid, allowing the sheet to be rolled out over the substrate. Full adherence to the substrate is achieved by applying pressure to the upper surface of the sheet.

At the roof's emerging elements, the sheet finishing with the vertical wall is carried out in accordance with the instructions provided in 5.5.

The types of heavy protection used over the POLITABER POL PY 30 + POLITABER POL PY 30 coating are those specified in 5.7.1, with the same limitations outlined in 5.4.3.

5.5 Finishing the coatings around emerging roof elements

The finishing of the coatings around emerging roof elements is always applied using an adherent system, glued by flame welding, and also mechanically fixed with suitable components of appropriate density, if the height of these finishings exceeds 0.40 m. The finishings should be adhered to the substrate in the flat area of the roof, in a band approximately 0.10 m wide and adjacent to the respective emerging element.

When these elements are made of concrete or mortar, it is essential to apply a layer of SUPERMUL bitumen primer first, at a minimum rate of 350 g/m^2.

Figure 1 illustrates, using the example of the POLITABER POL PY 30 + POLITABER COMBI 40/G coating, two alternative solutions for connecting the coating to an emerging roof element. In solution A, the finish is visible and covered with a metal flashing, while in solution B, the finish is integrated into the masonry wall and fully protected by reinforced render.

In the case of an 'inverted' roof application (with thermal insulation placed above the waterproofing system), the procedure shown in Figure 1 can also be applied for completing the finishing of the waterproofing around the emerging roof element. Since the thermal insulation is placed over the waterproofing system, the subsequent protective layers of this element should also be considered. This may include placing a separation layer over the thermal insulation, followed by a heavy protection layer.

5.6 Expansion joints

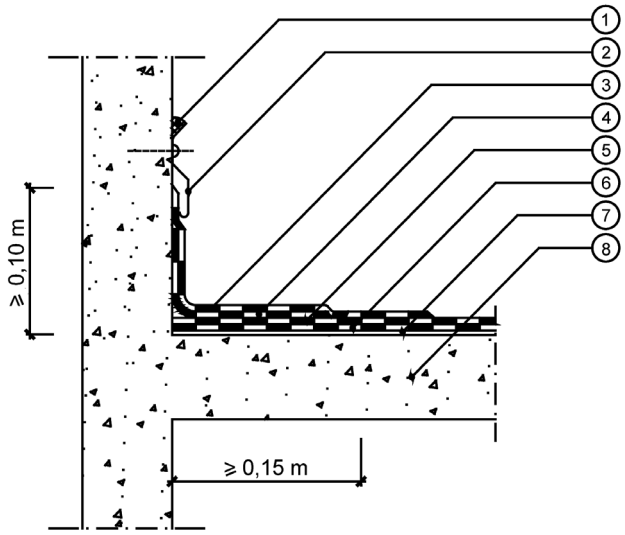
Along the expansion joints of the roof, waterproofing can be applied as shown in Figure 2, in the case of a coating with light protection (see 5.7.2). It is essential to place a flexible foam cord with an appropriate cross-section to support the waterproofing coating in the joint area.

5.7 Protection and finishing

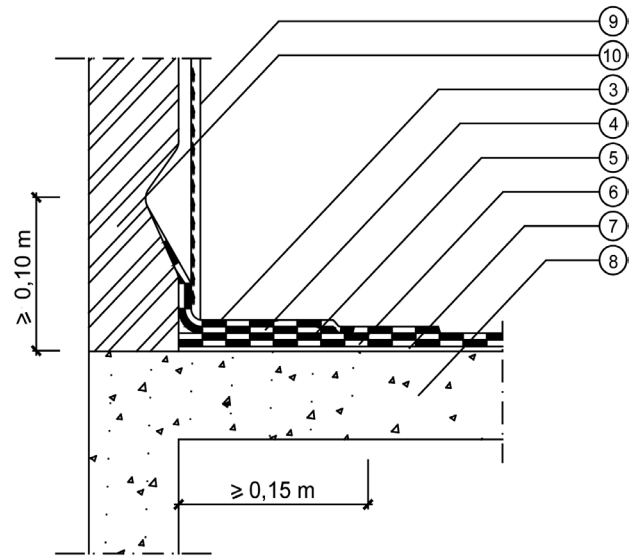
5.7.1 Heavy protection

The use of heavy protection is mandatory when applying the POLITABER POL PY 30 + POLITABER POL PY 30 coating. This type of protection limits the roof slope to 5% (see table 2).

A separation and reinforcement layer made of a suitable material (e.g., non-woven polyester felt or geotextile sheets with a minimum mass per unit area of 200 g/m^2) should be placed between the heavy protective layer and the waterproofing coating.



A – Unprotected insertion with a vertical wall

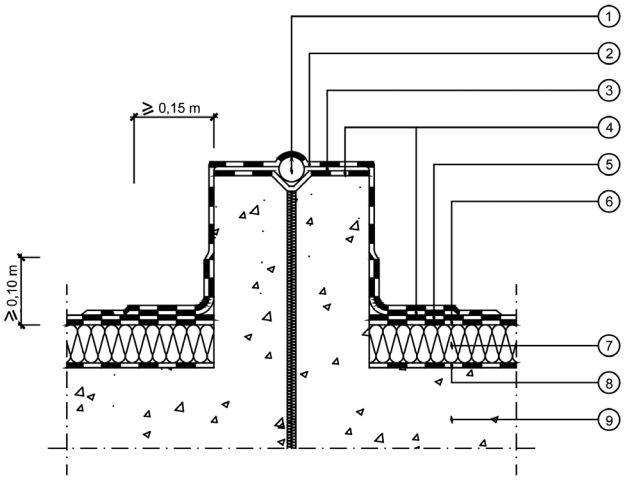


B – Protected insertion with a vertical wall

Legend:

1 Mastic
2 Metal flashing
3 Band of the sheet POLITABER COMBI 40/G
4 Band of the sheet POLITABER POL PY 30
5 Sheet POLITABER COMBI 40/G
6 Sheet POLITABER POL PY 30
7 Bitumen primer SUPERMUL
8 Substrate
9 Reinforced render
10 Masonry

Figure 1 – Finishing of the waterproofing coating around an emerging roof element



Legend:

1 Mastic or flexible foam cord
2 Welded POLITABER COMBI 40/G sheet
3 Flexible profile welded on both sides of the joint
4 Band of the sheet POLITABER POL PY 30
5 Sheet POLITABER COMBI 40/G
6 Sheet POLITABER POL PY 30
7 Thermal insulation layer
8 Primer and vapour control layer (including, if needed, a diffusion layer)
9 Substrate

Figure 2 – Raised expansion joint

The heavy protection applied over the POLITABER POL PY 30 + POLITABER POL PY 30 coating can consist of one of the following solutions:

- layer of coarse aggregate, preferably rolled, with a particle size ranging from 8 to 16 mm or 8 to 32 mm;
- quartered concrete screed, either reinforced or not;
- concrete slabs laid with mortar;
- hydraulic or ceramic tiles laid with mortar;
- small slabs on supports;
- reinforced concrete slab, quartered;
- concrete layer, at least 50 mm thick, reinforced with square steel mesh with openings not exceeding 0.15 m, featuring 4 mm diameter rods, and quartered with 20 mm wide joints in panels with dimensions not exceeding 5 m.

The first solution is used only on roofs with limited accessibility. For roofs accessible to vehicle traffic, only the last two solutions presented, or an equivalent solution, should be used.

Coarse aggregate should be applied in a layer at least 40 mm thick. The mass or the thickness of this layer should be determined based on the wind effects on the roof, as outlined in national regulations, considering the location, shape, and dimensions of the building.

In the case of applying screed (reinforced or not), concrete slabs, and hydraulic or ceramic tiles laid with mortar, quartering joints should be made in these layers, defining panels with dimensions not exceeding 4 m × 4 m. This should account for the entire thickness of the mortar and its finishes, as well as the concrete

or screed. Where expansion joints are present, the application of concrete, screed, or mortar, as well as the laying of slabs or tiles, should be interrupted to create a joint with the same width as the expansion joint.

When laying small slabs on supports, the area beneath each support should be reinforced with a band of POLITABER POL PY 30 sheet, with dimensions larger than those of the support. The dimensions of the supports are determined based on the loads and the nature of the materials supporting the waterproofing coating.

5.7.2 Light protection

Light protection is provided only when the POLITABER POL PY 30 + POLITABER COMBI 40/G coating is applied to a flat surface; this protection is offered by the mineral granules present in the second layer of the coating.

5.8 Health & safety recommendations

During or after the application of the waterproofing coatings, the use or handling of certain chemical substances – such as gasoline, petroleum, organic solvents, and concentrated oxidising products – should be avoided.

Handling of gluing or finishing products should be done using appropriate equipment, including gloves and suitable protective clothing.

The use of equipment or materials with sharp or pointed edges on the waterproofing sheets should also be avoided.

According to information from ASFALTOS CHOVA, the application of POLITABER POL PY 30 and POLITABER COMBI 40/G sheets does not pose any health risks, provided that proper precautions are taken to avoid inhaling fumes or vapours generated during the bonding process of overlapping joints or other elements.

6 MAINTENANCE AND REPAIR

It is recommended that maintenance work on the waterproofing coatings be carried out at least once a year, prior to the winter period. This should include general roof cleaning, particularly the removal of debris accumulated in the drains at the downpipe's guards or trop plein, as well as any parasitic vegetation that may have developed on the roof.

If the protection consists of small slabs on supports, elements with loads exceeding their load-bearing capacity should not be placed on the slabs, particularly in the case of removable flower boxes or other items with significant weight.

In the case of accidental damage to the coating, repairs should be carried out using bands of the same sheet materials, with appropriate dimensions, heat-welded – after cleaning the surface to be welded – onto the existing coating or edges of the coating, following the removal of the damaged area. Repair work should be performed carefully and in accordance with the manufacturer's instructions. However, this process should be avoided if the existing sheets have been in use for so long that their adherence to the new bands is compromised.

7 SALE AND TECHNICAL SUPPORT

7.1 Marketing modalities

ASFALTOS CHOVA, S.A.U. places its products directly on the market, bearing the CE marking.

7.2 Technical support

ASFALTOS CHOVA, S.A.U. provides technical support to users before, during, and after the application process. Upon request, the company also offers a list of its qualified applicators for the execution of the coatings covered by this Application Document.

8 EXPERIMENTAL ANALYSIS

8.1 Test conditions

The tests were conducted at LNEC in accordance with the methods described in the applicable European Standards and the LNEC document 'Rules for the granting of Application Documents for roof waterproofing systems formed by SBS and APP bitumen-polymer sheets' (in Portuguese), dated July 2010. This document is made available by LNEC at request (lnec@lnec.pt).

The collection of the sheets and their components, required for the tests and determinations performed at LNEC, was carried out by LNEC technicians at the manufacturing facilities of the company.

8.2 Test results

The experimental analysis conducted by LNEC involved tests to identify and characterise the bitumen sheets POLITABER POL PY 30 and POLITABER COMBI 40/G, along with their main components (reinforcement sheets and bituminous mixture). It also included tests to assess the performance of the coatings formed by these sheets. These tests were part of the previous approval studies as well as those leading to the issuance of the previous and current Application Documents for the coatings in question.

The results of the tests conducted were generally satisfactory. These results, along with the corresponding assessment, are included in LNEC report no. 230/2024 – DED/NRI – 'Study on the renewal of Application Document (DA) 115 relating to *Politaber* roof waterproofing coatings' (in Portuguese), dated June 2024.

Additionally, *Documento de Idoneidad Técnica n.º 578R/21*, dated June 24, 2021, issued by the *Instituto de Ciencias de La Construcción Eduardo Torroja* in Spain, provided a favourable technical opinion regarding the performance of the POLITABER POL PY 30 + POLITABER POL PY 30 coating applied to substrates with a 0% slope. However, in accordance with current Portuguese legislation (Article 43 of the *Regulamento Geral das Edificações Urbanas – RGEU*), the use of waterproofing coatings is forbidden for roofs with slopes of less than 1% to ensure the rapid and complete drainage of rainwater and washing water.

Finally, according to the information provided in the report from the Spanish laboratory *APPLUS* (Test Report 06/32301288, dated December 18, 2007) and the criteria defined by the *Ministerio de*

Industria, Turismo y Comercio of Spain (*Informe sobre critérios de agrupación para la extensión de la aplicación de los resultados de ensayo obtenidos según UNE-ENV 1187-2003 Ensayo 1 aplicables a las láminas betuminosas con armaduras*, dated November 18, 2007), the POLITABER POL PY 30 and POLITABER COMBI 40/G sheets are classified as Class E according to the European fire reaction classification.

9 VISITS TO WORK SITES

To assess the durability and maintenance of the appearance of POLITABER waterproofing coatings, several visits were conducted to sites under construction and already concluded. The oldest work site visited was approximately fourteen years old.

No significant defect in the performance of the coatings was detected in any of the sites visited.

10 PERFORMANCE ASSESSMENT

Based on the results of the tests and site visits conducted as part of the study carried out by LNEC, it is concluded that the waterproofing coatings formed by the POLITABER POL PY 30 and POLITABER COMBI 40/G sheets are suitable for their intended use.

In particular, satisfactory performance was observed regarding the main actions to which the coatings are exposed, specifically in terms of mechanical resistance to tension, tearing, and impact forces, as well as performance under both low and high temperatures.

Provided that the coatings are applied under the conditions outlined in this Application Document and that all other requirements, particularly regarding the quality of the products used, are met, it can be estimated that the waterproofing coatings formed by the POLITABER POL PY 30 and POLITABER COMBI 40/G sheets will have a service life of ten years, without the need for repairs, but subject to the normal maintenance conditions.

The indicated service life period should not be interpreted as a guarantee by the manufacturer, its representatives, or by LNEC. It should only be viewed as a guideline for selecting appropriate products based on the expected and economically reasonable service life of the works. The actual service life may extend beyond this period under normal usage conditions, provided there is no significant degradation that affects the essential performance requirements of the works.

11 RECEPTION TESTS

When doubts are raised, reception tests on site might be advisable to assess the identity of the sheets covered by this Application Document. In such cases, sample collection and testing must be conducted in accordance with the guidelines outlined in the aforementioned LNEC document 'Rules for the granting of Application Documents for roof waterproofing systems formed by SBS and APP bitumen-polymer sheets' (in Portuguese), dated July 2010, which can be requested to LNEC (lnec@lnec.pt).

These tests should make it possible to verify that the characteristics of the sheets presented in Table 3 comply with the specified limit values and fall within the defined tolerance ranges.

TABLE 3

Limit values and tolerance ranges for sheets characteristics

Characteristics	Direction of the roll	Limit values and tolerance ranges for declared values
Length (m)		
POLITABER POL PY 30	–	≥ 12.00
POLITABER COMBI 40/G	–	≥ 10.00
Width (m)	–	≥ 1.00
Thickness (mm)		
POLITABER POL PY 30	–	2.10 ± 0.12
POLITABER COMBI 40/G	–	3.00 ± 0.15 (1)
Mass/m² (kg/m²)		
POLITABER POL PY 30	–	$3.00\ ^{+0.30}_{-0.15}$
POLITABER COMBI 40/G	–	$4.00\ ^{+0.40}_{-0.20}$
Maximum force – tension (N)		
POLITABER POL PY 30	L	700 ± 200
	T	450 ± 150
POLITABER COMBI 40/G	L	700 ± 200
	T	450 ± 150
Elongation at maximum force (%)		
POLITABER POL PY 30	L	45 ± 15
	T	45 ± 15
POLITABER COMBI 40/G	L	45 ± 15
	T	45 ± 15
Flexibility at low temperature (temperature to which cracking is absent)	L/T	≥ – 15 °C
Flow resistance at elevated temperature (temperature to which flow is absent)	L/T	≤ 100 °C

L longitudinal direction

T transverse direction

(1) total thickness

12 USAGE REFERENCES

ASFALTOS CHOVA, S.A.U. has been manufacturing polymer-bitumen sheets with the same characteristics as those currently used for approximately forty years.

According to data provided by the company, some of the most representative sites where POLITABER coatings were applied in Portugal are listed below, covering a total area of approximately 39,500 m^2:

- Campanhã Station (Minho and Douro), in Oporto;
- Serzedo Elementary School, in Vila Nova de Gaia;
- Alto da Bandeira School, in Guimarães;
- Residential building, in Santa Eulália (Gondomar);
- S. Gualter residential building, in Guimarães;
- Casal Vistoso Municipal Sports Complex, in Lisbon;
- National Institute for Civil Aviation, in Lisbon;
- Urbanisation of Igreja Nova, in Fafe;
- Residential building at Rua do Mocho, Monte Lírio, in Espinho;
- Urbanisation of Vilarinha, in OPorto.

ANNEX

Factory production control tests

Controlled material	Tests performed	Frequency
Direct distillation bitumen	Penetration at 25 °C	All batches (1)
Reinforcement	Mass/m²	Once a month
	Tensile properties	Once a month
Fillers	Particle size distribution	Once a week
	Moisture content	Once a week
Bituminous mixture	Softening point	All batches (1)
	Penetration at 25 °C	All batches (1)
	Ash content	All batches (1)
Sheets	Length and width	All batches (1)
	Thickness and mass/m²	All batches (1)
	Flexibility at low temperature:	
	– pristine condition	Once a week
	– after 24 weeks at 70 °C	Once a year
	Dimensional stability	Twice a year
	Flow resistance at elevated temperature:	
	– pristine condition	Once a week
	– after 24 weeks at 70 °C	Once a year
	Tensile properties	Once a month
	Resistance to tearing	Twice a year
	Mass loss of protective mineral granulate (2)	Once a month

(1) According to standard EN 13707:2013, a batch is defined as the quantity of product (bitumen sheet) produced under the same specification within a maximum period of 24 hours. For raw materials, a batch refers to the quantity of material supplied in each delivery. In the case of bituminous mixtures, each batch corresponds to a complete mixture.
(2) Only applicable to POLITABER COMBI 40/G sheet

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