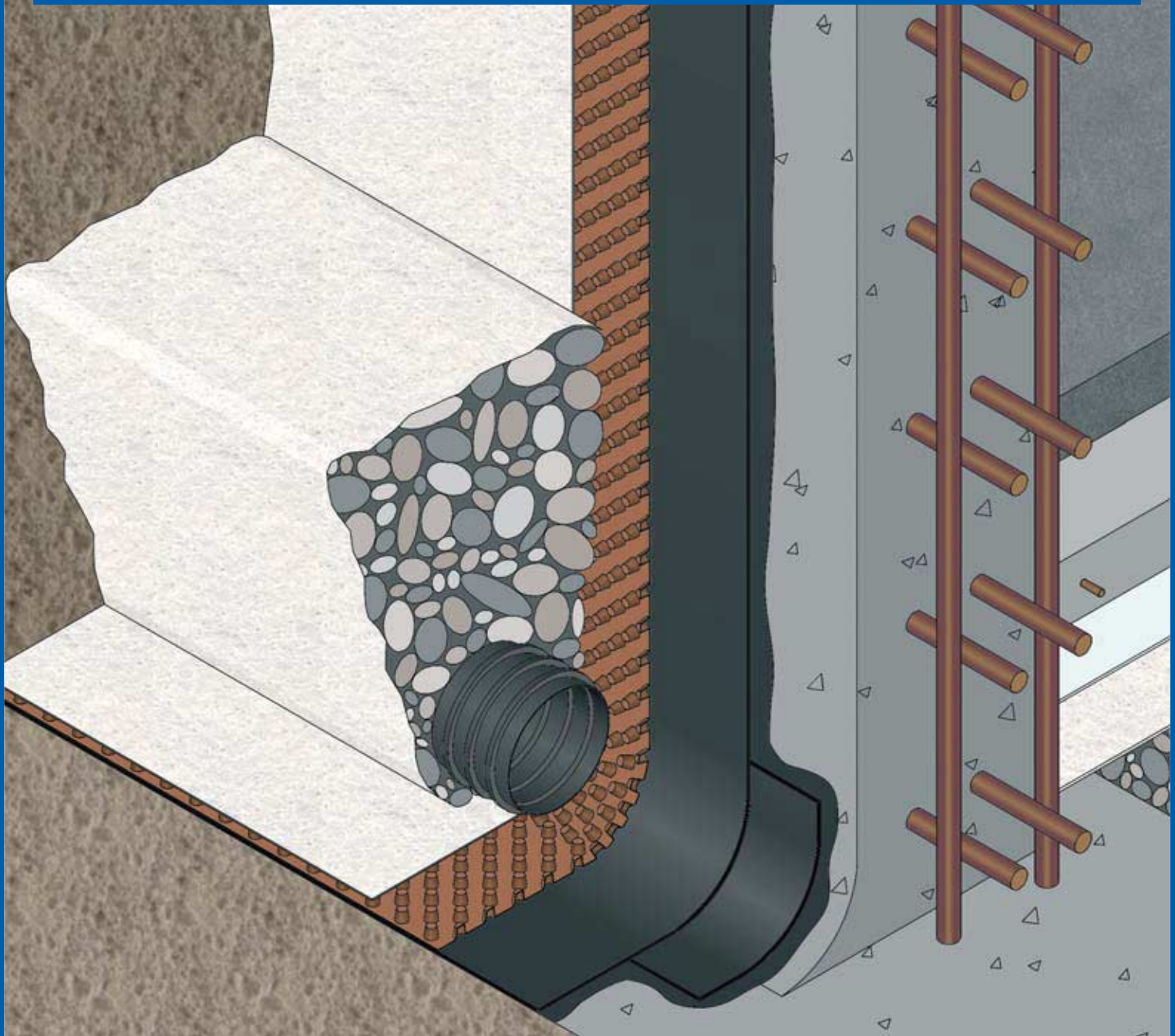


# DANOSA SYSTEMS FOR WATERPROOFING, PROTECTION AND DRAINAGE OF UNDERGROUND WALLS IN BUILDING AND CIVIL WORKS



DANOSA offers the global solution: **SISTEMA DANOSA DE IMPERMEABILIZACIÓN, PROTECCIÓN Y DRENAJE**



*Impermeabilización*



*Aislamiento Acústico*



*Drenajes y Geotextiles*

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## DESCRIPTION

Protection against moisture from the walls in contact with the ground deserves special attention in the design phase, since this kind of work units, to be buried, are virtually inaccessible to intervene in case of future repair needs.

It is essential to act on three fronts wherever possible: waterproofing, drainage and protections, bearing in mind that none of the three treatments can replace the others, but must act together to achieve maximum effectiveness in order to protect underground works against the action of the water.

## DANOSA SOLUTIONS

<i>Affected Area</i>	<i>Preparation of the surface</i>	<i>Waterproofing</i>	<i>Drainage and protection</i>
RESIDENTIAL BUILDINGS	Primer	<b>ESTERDAN 30 P ELAST</b>	<b>DANODREN H PLUS</b>
RESIDENTIAL AREAS	Primer	<b>SELF-DAN B.T.M.</b>	<b>DANODREN H PLUS</b>
NO RESIDENTIAL AREAS	<b>MAXDAN CAUCHO</b>		<b>DANODREN H PLUS</b>

## DANOSA RECOMMENDATION

**1** The increased demand to protect against the action of the water in underground walls, which will remain almost inaccessible for future maintenance jobs, makes necessary to apply the three performances of greater benefits: waterproofing, protection and drainage.

**PRIMER+ ESTERDAN 30 P ELAST + DANODREN H 15 PLUS.**

**2** In the event that no torch can be used or skilled operators are not available, as the case of small single-family houses with basement or basement dedicated to storage, garage or other uses

**DANOSA** recommend self-adhesive systems:

**PRIMER + SELF-DAN B.T.M. + DANODREN H PLUS.**

**3** In case of civil works we find a lower level of requirements, or the works are not for residential areas, like roads or railways, vaults, false tunnels.....

Our minimum recommendation is:

**MAXDAN CAUCHO + DANODREN H PLUS.**

## WATERPROOFING:

- **ESTERDAN 30 P ELAST** and **SELF-DAN B.T.M.** membranes due to are composed of an elastomeric modified bituminous mastic SBS, that substantially improves other bituminous mastics as the oxidised or APP, provide higher performances at high or low temperatures elasticity and aging resistance, which implies an improvement of the durability and tightness of the waterproofing membrane.



- Security tightness in applying waterproofing sheets, fully adherent (self-adhesive or torch).
- **ESTERDAN 30 P ELAST** membrane, due to its polyester reinforcement, has the following advantages:
  - Total waterproofing.
  - Great resistance to tearing.
  - Great tensile strength and elongation to break.
  - Great resistance to static and dynamic punch.
  - High long term stability.
- **SELF-DAN B.T.M.** membrane, thanks to its external protection composed by coextruded polyolefins, and its polyester reinforcement, has the following advantages:
  - Total waterproofing.
  - User friendly installation.
  - Application at outdoor temperatures.
  - High long term stability.

## PROTECTION AND DRAINAGE:

- **DANODREN H15 PLUS:** is a nodular sheet composed of high density polyethylene (HDPE) thermally bonded to a non-woven geotextile of calendered polypropylene of 115 g/m<sup>2</sup>. Advantages:
- Provides a permanent drainage, avoiding hydrostatic pressure and the direct contact of the moisture against the wall. Great tensile strength and compression.
- Avoids the use of antipunching membranes.
- The thermally bounded geotextile, absorbs and filters the water coming out from the ground, avoiding the silting of the drainage system.
- High tensile strength of the geotextile.
- Due to the composition of the geotextile, (Polypropylene) **DANODREN H PLUS** can remain uncovered during a certain time, keeping its mechanical and hydraulic properties.
- Resistant to chemical agents coming out from the ground (sulfates, chlorides, ...).
- Great durability.
- Easy installation.

## • SURFACE PREPARATION

**CURIDAN:** Water-based bituminous emulsion specially designed to prime and prepare mortar, metallic sheets and wood. Cold application

**IMPRIDAN 100:** Organic-based bituminous painting specially designed to prime and prepare mortar, metallic sheets and wood. Can be used for both horizontal and vertical surfaces.

**MAXDAN CAUCHO:** Cold applied emulsion, composed of bituminous particles in a water solution with an emulsifying agent.



## • WATERPROOFING

**ESTERDAN 30 P ELAST:** Non-selfprotected elastomeric membrane type LBM- (SBS)-30-FP composed of a non-woven polyester reinforcement, covered on both sides by a elastomeric modified bituminous mastic (SBS), and a plastic film as anti-adherent material.

**SELF-DAN B.T.M.:** Self-adhesive bituminous waterproofing sheet with non-protected surface of 1.5 kg/m<sup>2</sup>. Composed of a self-adhesive polymer bitumen with an upper surface finished in a coextruded polyolefin film, and lower surface by a plastic film as anti-adherent material.

Complementary Products

- REINFORCEMENT BANDS: **ESTERDAN 30 P ELAST** reinforcement bands 0,32 o 0,48 m proceed from an elastomeric bituminous membrane, non-selfprotected surface type LBM (SBS)-30-FP, composed of non-woven polyester reinforcement, and covered on both faces by an elastomeric bituminous mastic (SBS), using a plastic film as antiadherent material.

## • PROTECTION AND DRAINAGE

**DANODREN H PLUS:** High density polyethylene nodular sheet (HDPE) thermally bonded to a non-woven geotextile of calendered polypropylene of 115 g/m<sup>2</sup>.

Complementary Products:

-FIXINGS:

- type "shot" with a plastic joint.
- self-adhesive with finishing protection.

-Metalic profile in 2 m long pieces

-Drainage pipe: Corrugated and flexible HDPE pipe, perforated all around its perimeter,  
**TUBODAN 160.**



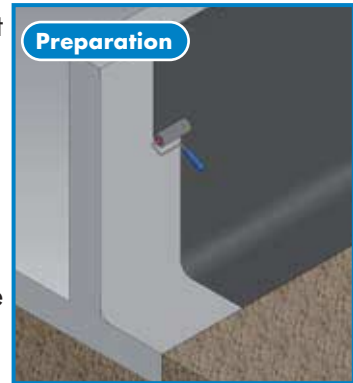


Generally, waterproofing works can't be done when weather conditions may be harmful, especially when it is snowing or there is snow or ice on the wall, when raining or strong winds blow, neither when the temperature of the product and/or wall is less than  $-5^{\circ}\text{C}$ . In case of the self-adhesive membrane, SELF-DAN BTM, waterproofing should not take place when the temperature of the product or wall is less than  $+5^{\circ}\text{C}$ .

## SURFACE PREPARATION

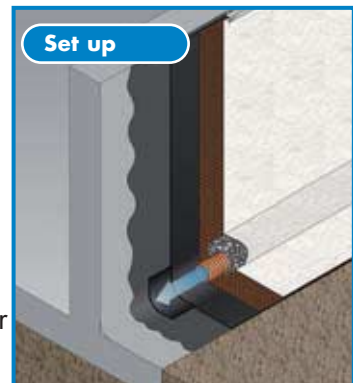
In all waterproofing works, conditions of the walls and application must be taken into account.

- 1 The surface of the wall must be resistant enough, even, plain, clean and dry.
- 2 Singular points must also be prepared before the installation of the membrane.
- 3 Previous to the waterproofing of the wall a bituminous primer must be applied. Applying surface must be plain, dry and clean out of dust and grease.



## WATERPROOFING

- 4 The **ESTERDAN 30 P ELAST** membrane, is applied on vertical position. Adherence to the wall must be done by torch. Overlaps must be both transversally and longitudinally welded (min. 8 cm) For easier installation, DANOSA recommends to cut the rolls in smaller dimensions.  
For the **SELF-DAN B.T.M.** membrane, rolls must be transversally applied. Adherence of the membrane to the wall must be made by removing the film of the lower face.



Overlaps must be both transversally and longitudinally welded (min. 8 cm)

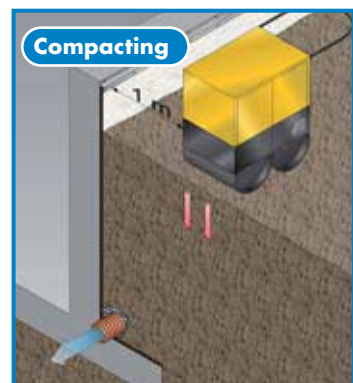
For easier installation, DANOSA recommends to cut the rolls in smaller dimensions.

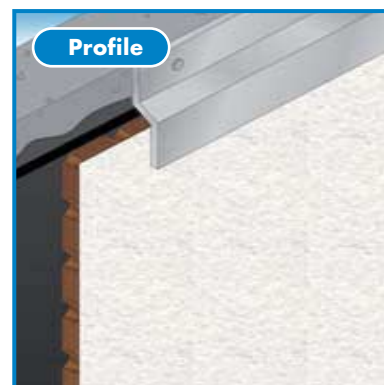
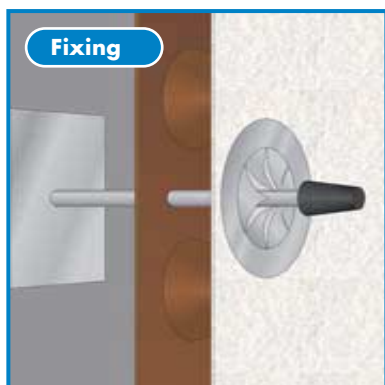
## PROTECTION AND DRAINAGE

- 5 **DANODREN H PLUS** rolls must be applied with the geotextil against the ground, setting the fixings every 50 cm max. Overlaps 10 - 12 cm

Adhesive fixings can also be used.

- 6 In order to ensure the draining mebrane, the metallic profile must be mechanically fixed to the wall.





When using **MAXDAN CAUCHO** and **DANODREN H PLUS**, the application of the emulsion is (1 kg/m<sup>2</sup> per layer).

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UNE-EN ISO 9001: 2000

Mayo 2007