General catalogue
Expansion joints

JEMA®

CAUCHOS JEMA, S.A.





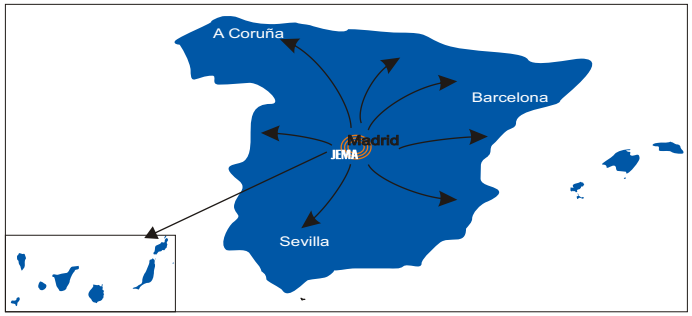
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CAUCHOS JEMA, S.A.

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Introduction





Since our foundations in 1967, we have been a company dedicated to the manufacture of pieces of rubber and metal-rubber through vulcanization by compression and injection geared to auto-motion, public and civil works and industry in general.

We use a high quality management system certified in accord with norm ISO-9001: 2008, accredited by BVQI on June 11 2001.
In 2009 we obtained the certificate of conformity CE which guarantees compliance with the specifications described in Annex ZA of Norm EN 1337-2:2005. Both certificates keep their validity through annual audits carried out by the accrediting agencies.





In the following we supply information about the expansion joints that we manufacture, the features of the materials we use, and other data that we hope will be useful.





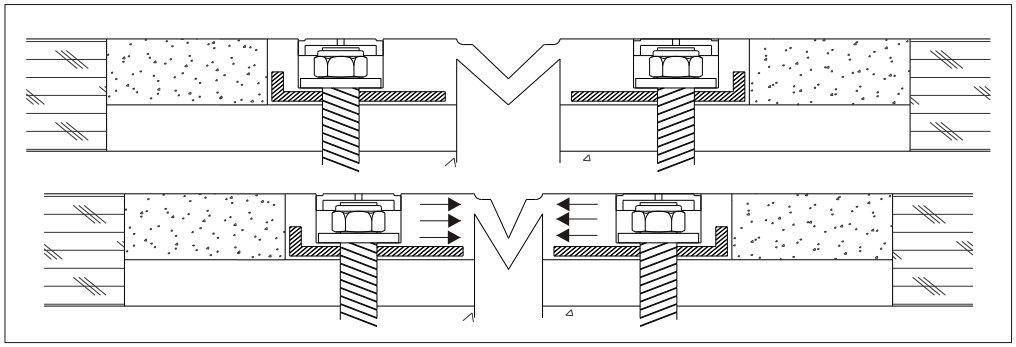
Definition of expansion joints

CAUCHOS JEMA, S.A.

Expansion joints are used to connect the borders of two contiguous pieces of board or of a piece of board and a support, so that a certain movement is feasible between the structure and the elements that surround it.
In order for a joint to be able to correctly fulfill its function it must satisfy the following conditions:

- insure the ability of movement of the board
- provide continuity to the layer of circulation, being capable of supporting the pressure of traffic.
- not being the source of noises, impacts and/or vibrations.
- have a good reservoir and allow an adequate drainage of water





The reinforced joints consist of an elastomeric band within which some metallic reinforcements are inserted, which give it the rigidity and resistance that are necessary to transfer the pressure of traffic. This type of joints is the appropriate one for structures with medium or large movements, or when the vertical component of those movements is important. These joints present good features of durability. Normally they are used for movements that oscillate between approximately 40 and 330 mm. The joints are manufactured in pieces of short length in our case of one meter that join to each other with the system of male and female, which facilitates their installation or renovation.



Definition of profiles of compression

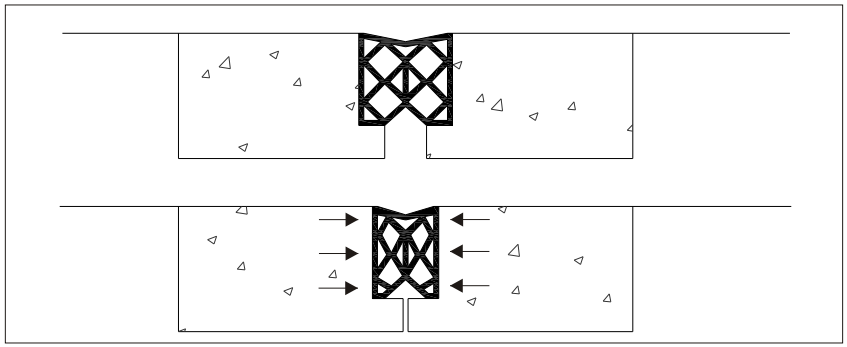
The profiles of compression are built by a rubber container with reinforced side walls and horizontal joints easily flexible that can absorb complete movements of the joint up to 50 mm. This way a comfortable traffic is made possible.

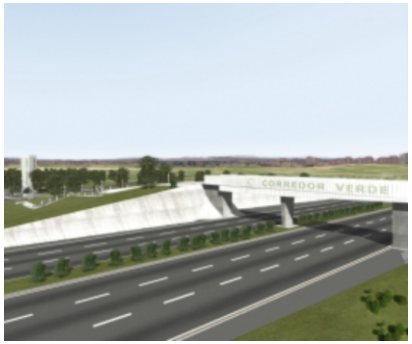
The main features of these profiles are:

-With well designed modules it allows to create joints of different directions: straight, oblique, angled, etc.

-Since they are manufactured with synthetic rubber, it has a very high level of resistance both physical and mechanical. It is highly resistant to, among other factors, hydrocarbon, solvents, temperatures, abrasion, etc.

The section of the profiles is a reinforced bee panel, since this structure allows to reach high mechanical resistance. In addition, we have three versions of the profile, which can absorb movements of up to 50 mm. Their position adjacent to the walls of the joint precludes possible deformation, thus maintaining the properties of the pressure to which it is subjected.

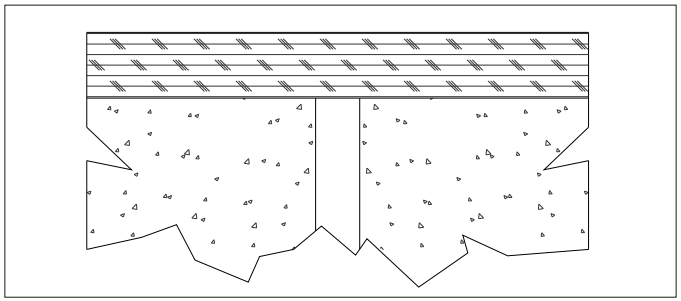




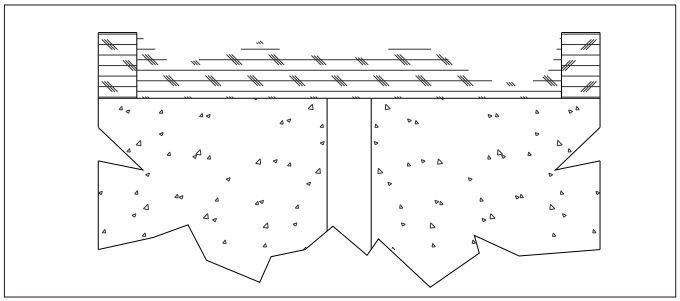
Its use is indicated for the sealing of joints in boards of bridges, and in other structures of similar characteristics as well. Their incorporation into the structures creates a discontinuous surface, for this reason it is necessary to mount the joint in the surface in order to protect the agglomerate from the impact of the vehicles that circulate over it, and to establish a sealing system. This is achieved by building side guard barriers with high resistance mortar, side-guard barriers that are adhered to the asphaltic concrete of the structure. This way, the foreseen movements are absorbed and traffic becomes smooth.

Installation guide

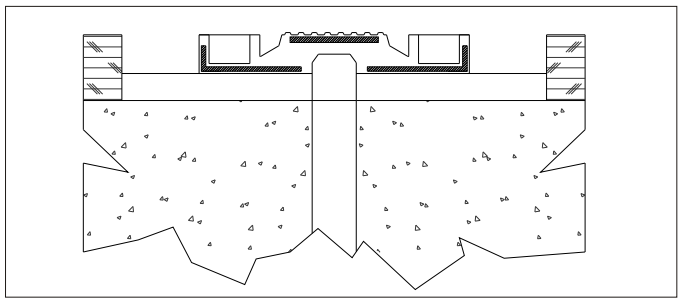
CAUCHOS JEMA, S.A.



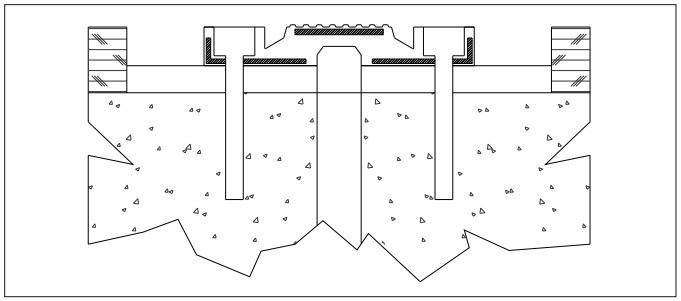
VIEW OF THE PLAN OF THE BRIDGE



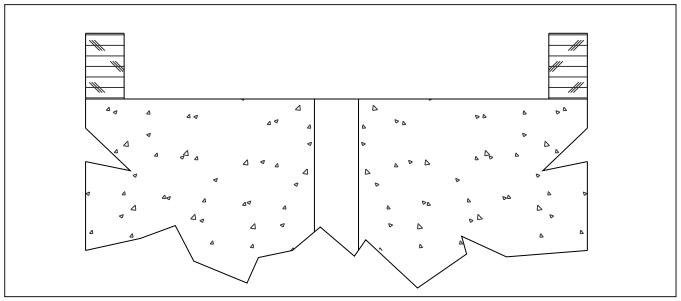
MARKING AND PLAN OF THE AGGLOMERATE



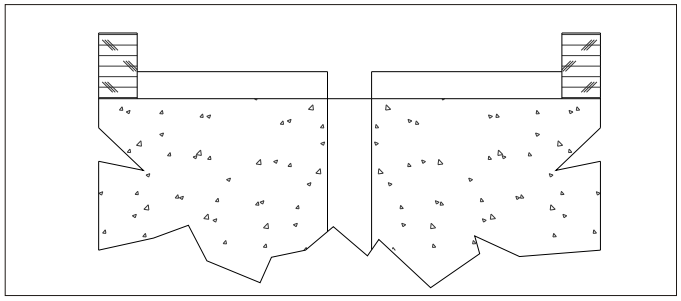
PLACE AND POSITION OF THE JOINT



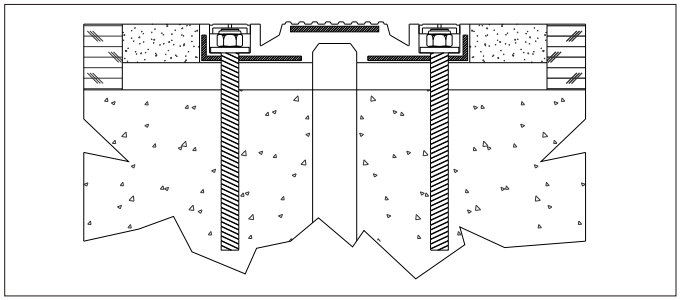
DRILLING FOR THE ANCHORAGE (INSERTION) OF THE JOINT



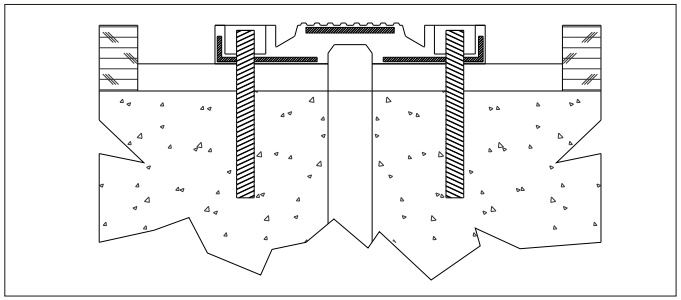
CLEANING OF THE AGGLOMERATE



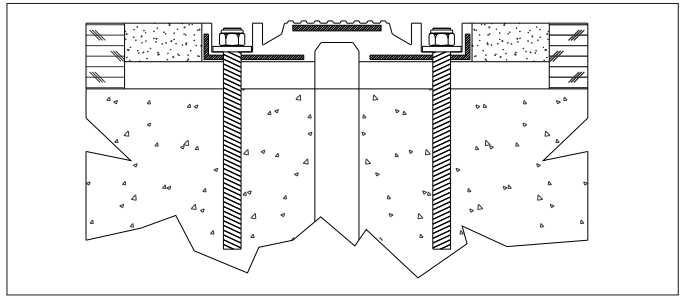
LEVELING MORTAR



SEALING OF THE ANCHORAGE (INSERTION) BOLTS



POSITION, GLUING WITH RESIN AND TIGHTENING OF THE BOLTS

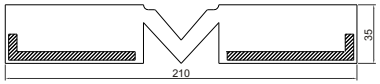


FILLING OF THE SIDE-GUARD BARRIERS WITH RESIN

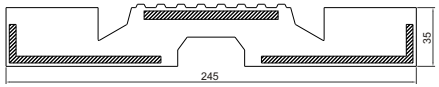
Measurements-movements

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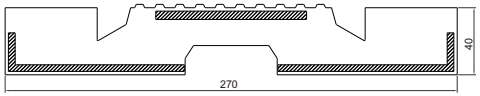
PJ-6000 Movement 50 mm



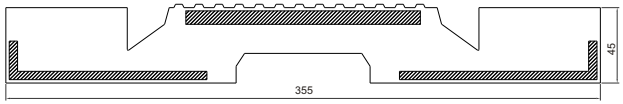
PJ-6001 Movement 45 mm



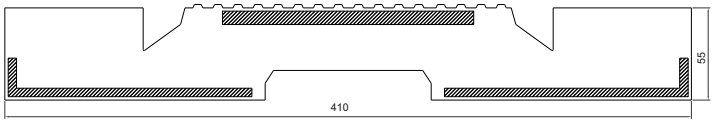
PJ-6002 Movement 55 mm



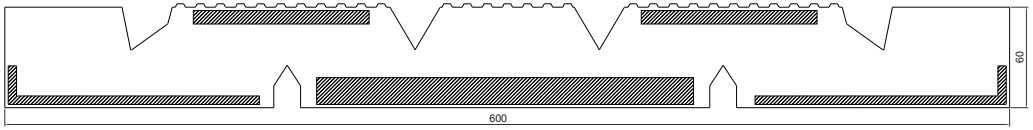
PJ-6003 Movement 70 mm



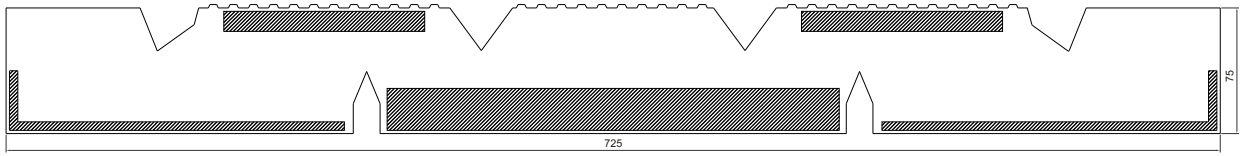
PJ-6004 Movement 100 mm



PJ-6005 Movement 120 mm



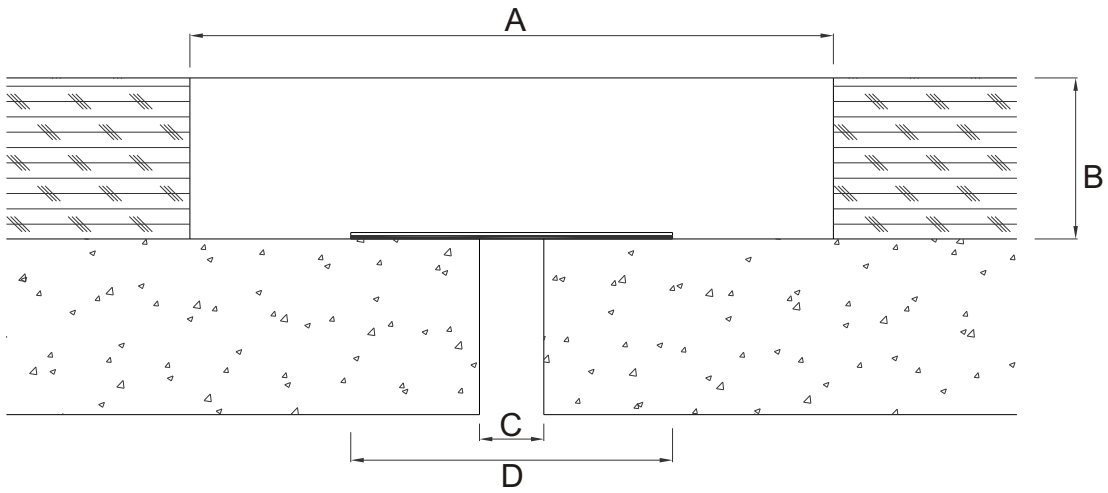
PJ-6006 Movement 160 mm



Metal sheet galvanied with rubber

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Metal sheet galvanized with rubber for elastic extension joint done on the basis of asphaltic putty warm and dry. For movements of up to 40 mm in new or renovation work.

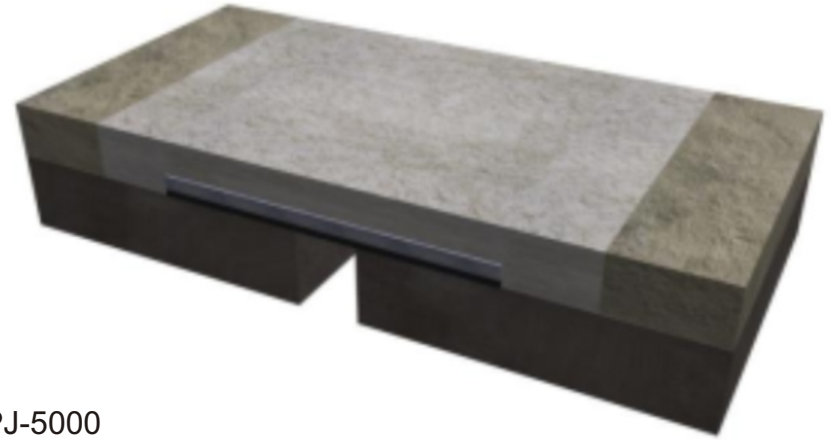


RECOMMENDED MEASURES

A	B	C	D
400	100	40	200

THE SIZE OF THE SHEET IS 1000 X 200 X 2mm





PJ-5000

Technical data of compression profile

ELASTOMERE

METHODE OF PROOF	CHARACTERISTICS	UNIT	REQUIREMENTS	
	Specific weight	*g/cm ³*	*1,16*	*1,16*
ASTM D2240	*Hardness*	*Shore A*	*65*	*65*
ASTM D412	*Resistance to traction*	*Mpa*	*11*	*11*
ASTM D412	*Expansion at point of rupture*	*%*	*400*	*400*
ASTM D624 Die C	*Resistance to tearing*	*N/mm*	*35*	*35*
	Working temperature	*ºC*	*-40 / 115*	*-40 / 115*
ASTM D573	*Accelerated aging in heat (70 h 100ºC)*			
	Variation in hardness	Shore A	5	
	Variation of resistance to traction	%	-15	
	Variation of expansion at the point of rupture	%	-25	
ASTM D395	*Remaining deformation due to compression (22 h 70ªC)*	*%*	*25*	
	Resistance to ozone		*Excellent*	
	Resistance to diluted acids and bases		*Excellent*	
	Resistance to concentrated acids		*Moderate*	
	Resistance to hydrocarbons		*Moderate*	
	Resistance to organic solvents		*Moderate*	

Technical Data of Expansion Joint

ELASTOMERE

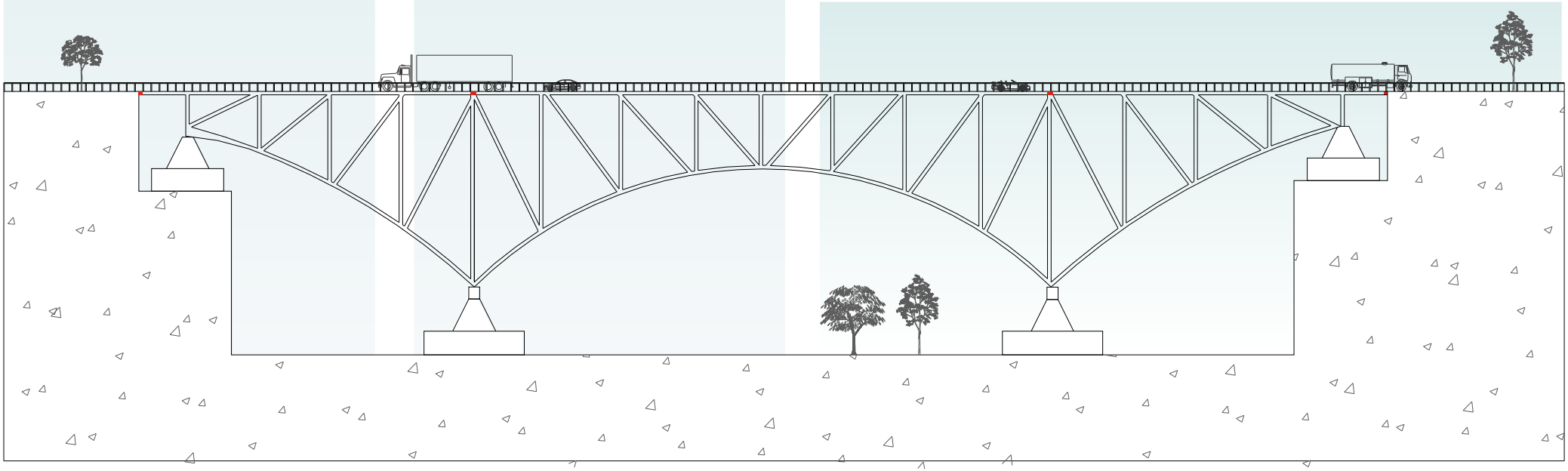
METHOD OF PROOF	CHARACTERISTICS	UNIT	REQUIREMENTS
UNE-ISO 48	Hardness	Shore A	55 / 60
UNE-ISO 37	Resistance to traction	Mpa	≥ 14
UNE-ISO 37	Minimum lengthening to the point of rupture	%	350
UNE-ISO 34-1	Minimum resistance to tearing	KN/m	≥ 5
UNE-ISO 815-1	Remaining deformation at high temperature (24 h, 70 °C)	%	≤ 35
UNE-ISO 188	Accelerated aging (168 h, 70° C)		
	Variation of hardness	Shore A	± 10
	Variation of resistance to traction	%	± 20
	Variation of lengthening at the point of rupture	%	± 25
UNE-ISO 1431-1	Resistance to ozone (96 h to 40°C concentration 25 ppcm)		No cracks
UNE 53541	Resistance to low temperature (-25°C)		
	Fragility at low temperature		No cracks
	Hardness in low temperature. Maximum increase over original value.	Shore A	15
	Remaining deformation due to compression at low temperature	%	≤ 50
UNE 53565	Minimum adherence	N/mm	7
UNE 53540	Variation of volume after 7 days in water	%	0 a 15

STEEL S-235

NORM	MECHANICAL FEATURES	UNIT	REQUIREMENTS
EN 10025-1	Elastic limit, minimum	N/mm^2	235
	Tension at point of rupture	N/mm^2	360 - 510
	Lengthening	%	26

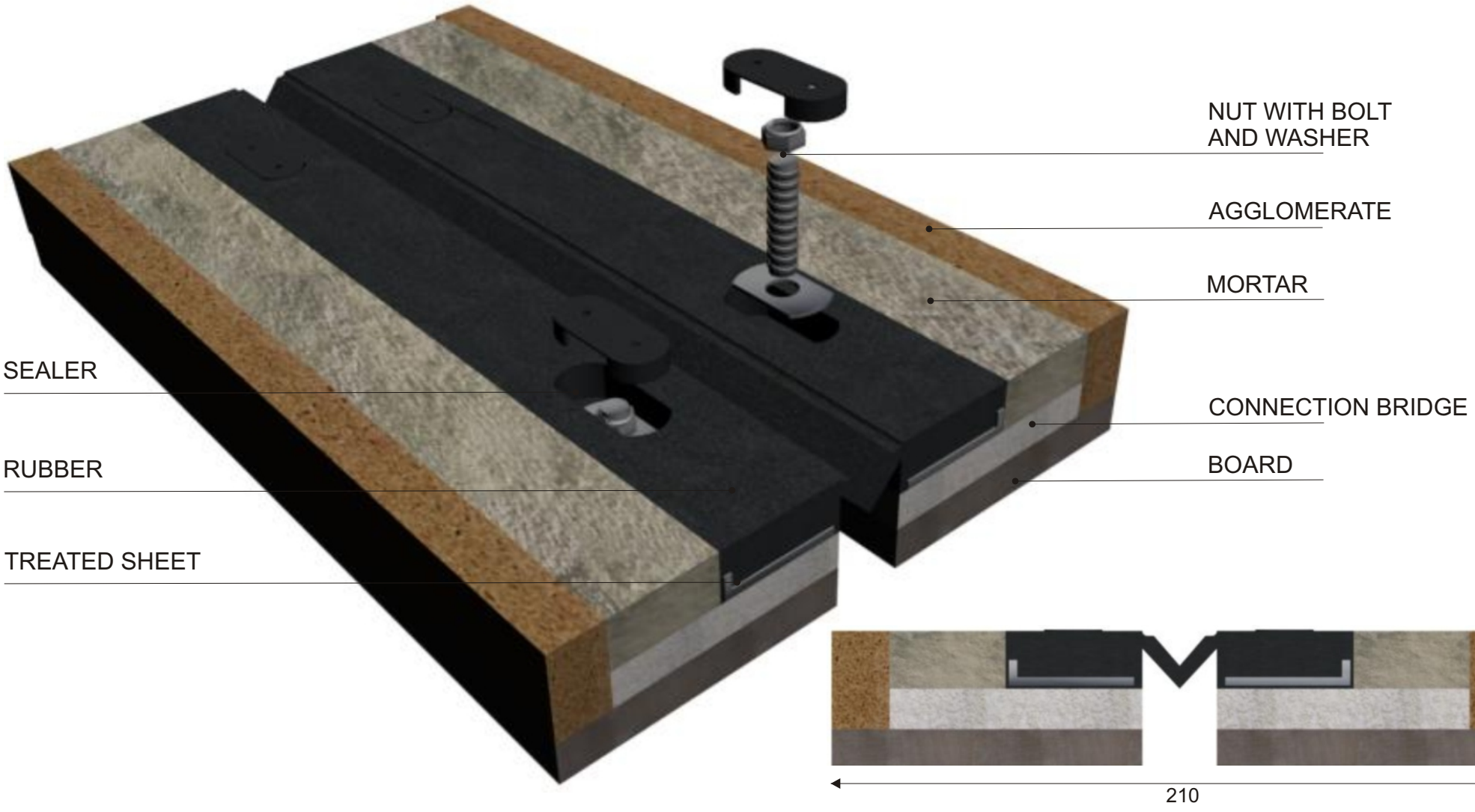
Types of joints

CAUCHOS JEMA, S.A.



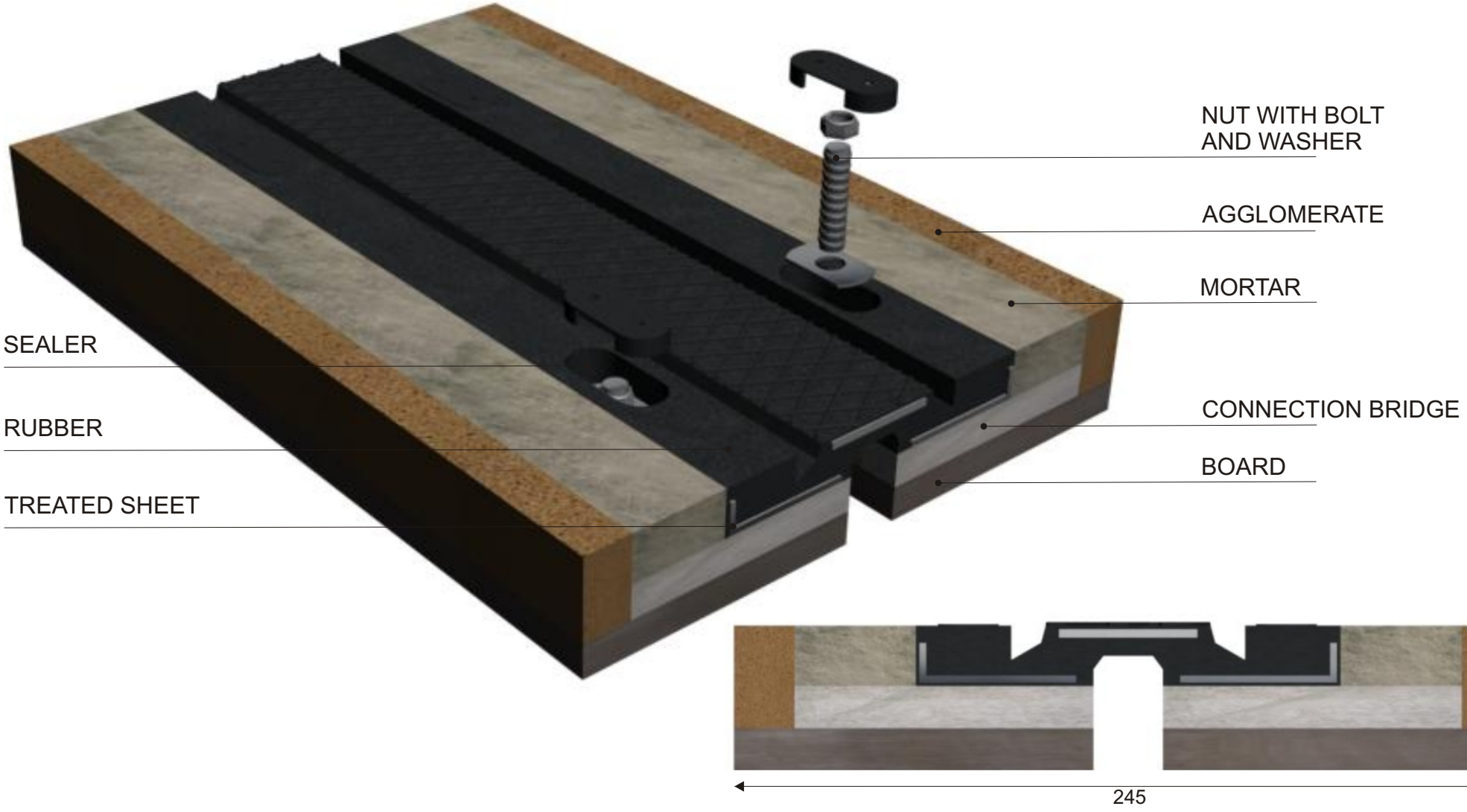
Type PJ-6000

CAUCHOS JEMA, S.A.



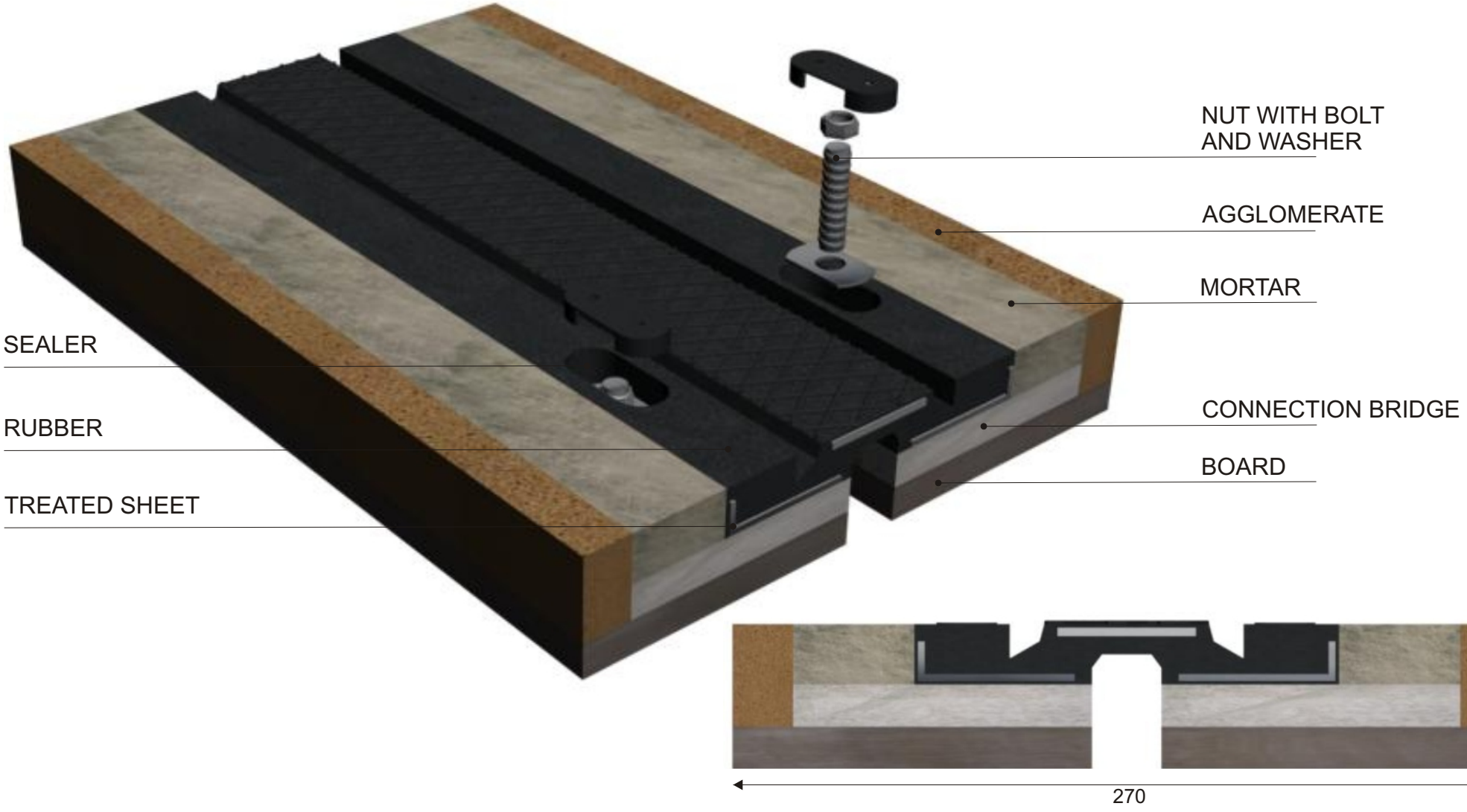
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CAUCHOS JEMA, S.A.



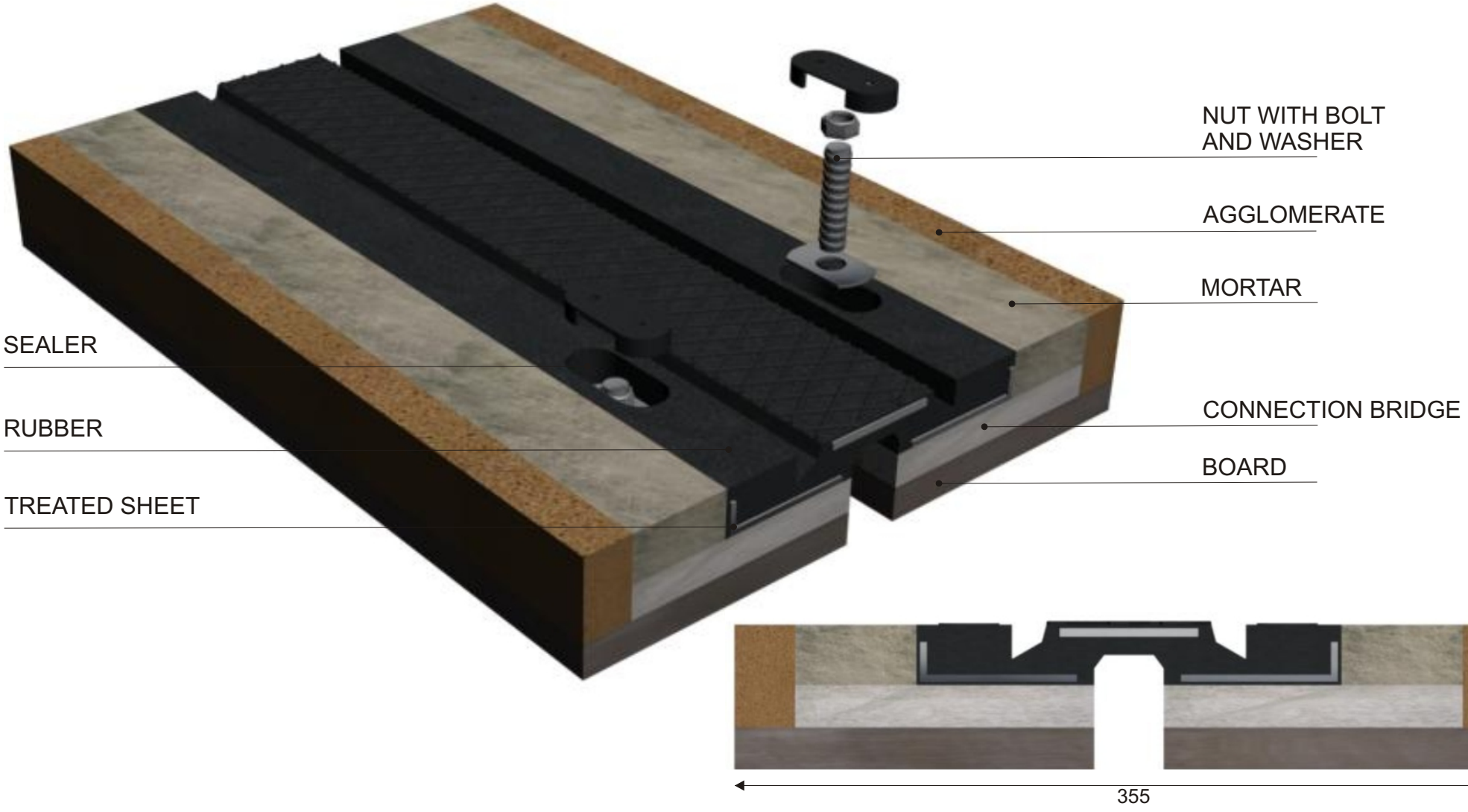
Type PJ-6002

CAUCHOS JEMA, S.A.

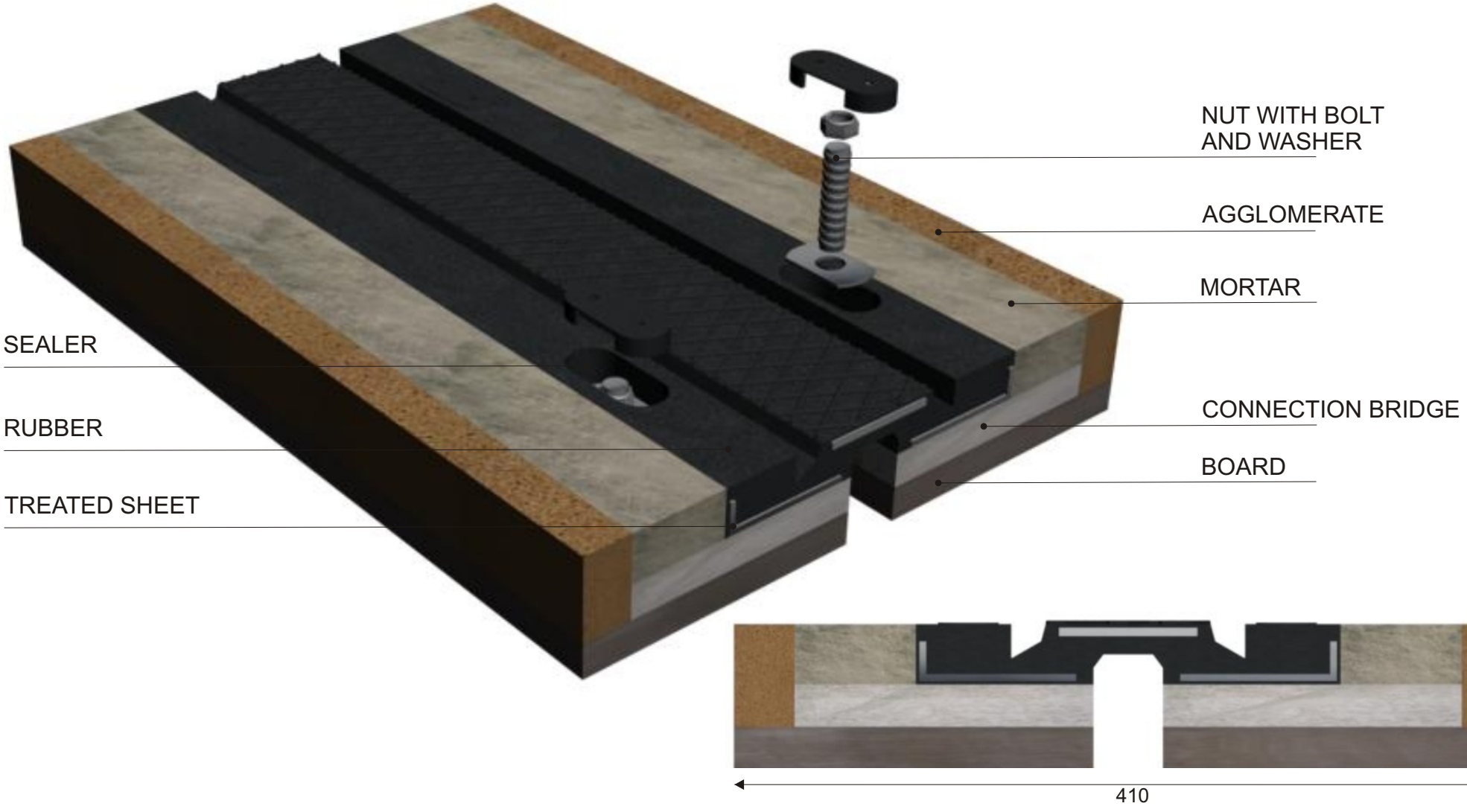


Type PJ-6003

CAUCHOS JEMA, S.A.

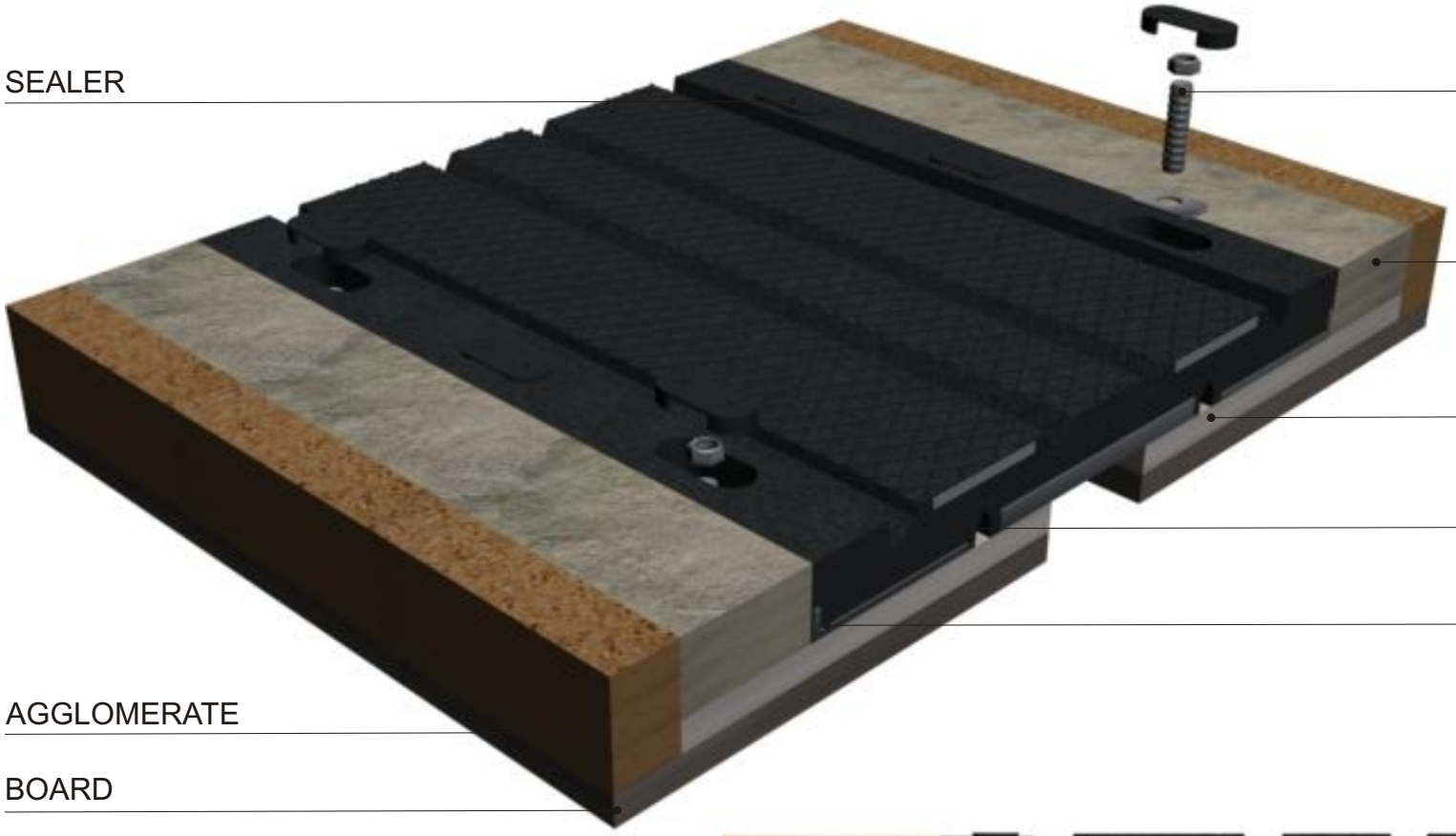


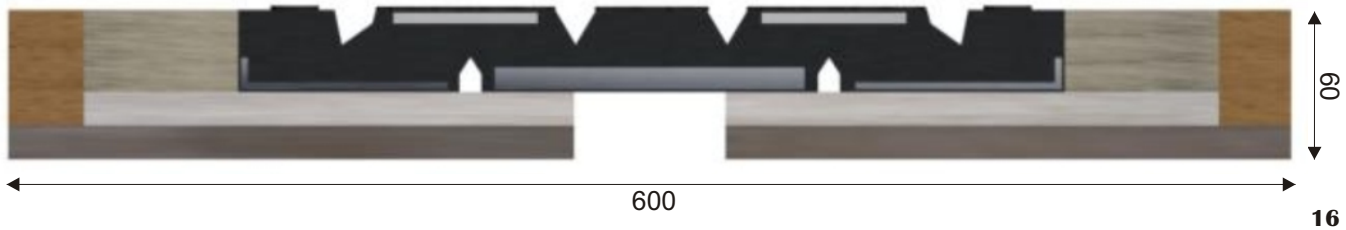
Type PJ-6004


NUT WITH BOLT
AND WASHER
AGGLOMERATE
MORTAR
SEALER
CONNECTION BRIDGE
RUBBER
BOARD
TREATED SHEET
55
410

Type PJ-6005

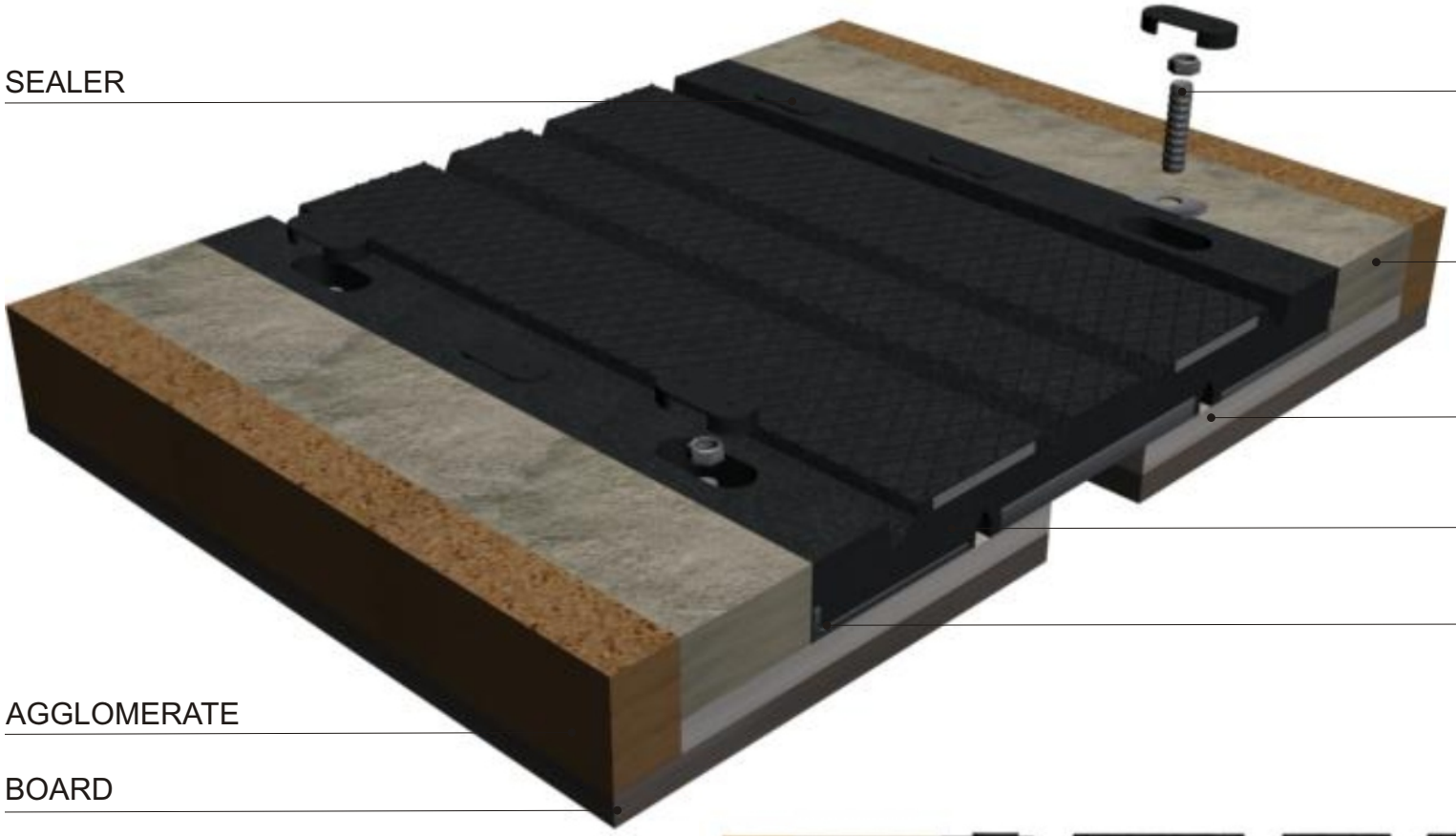
CAUCHOS JEMA, S.A.

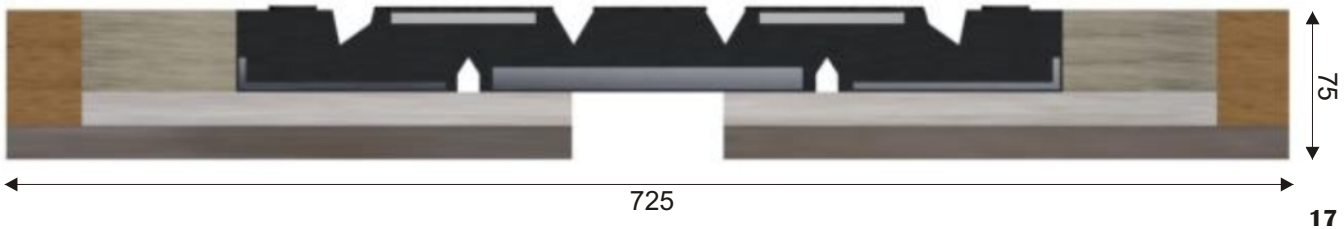




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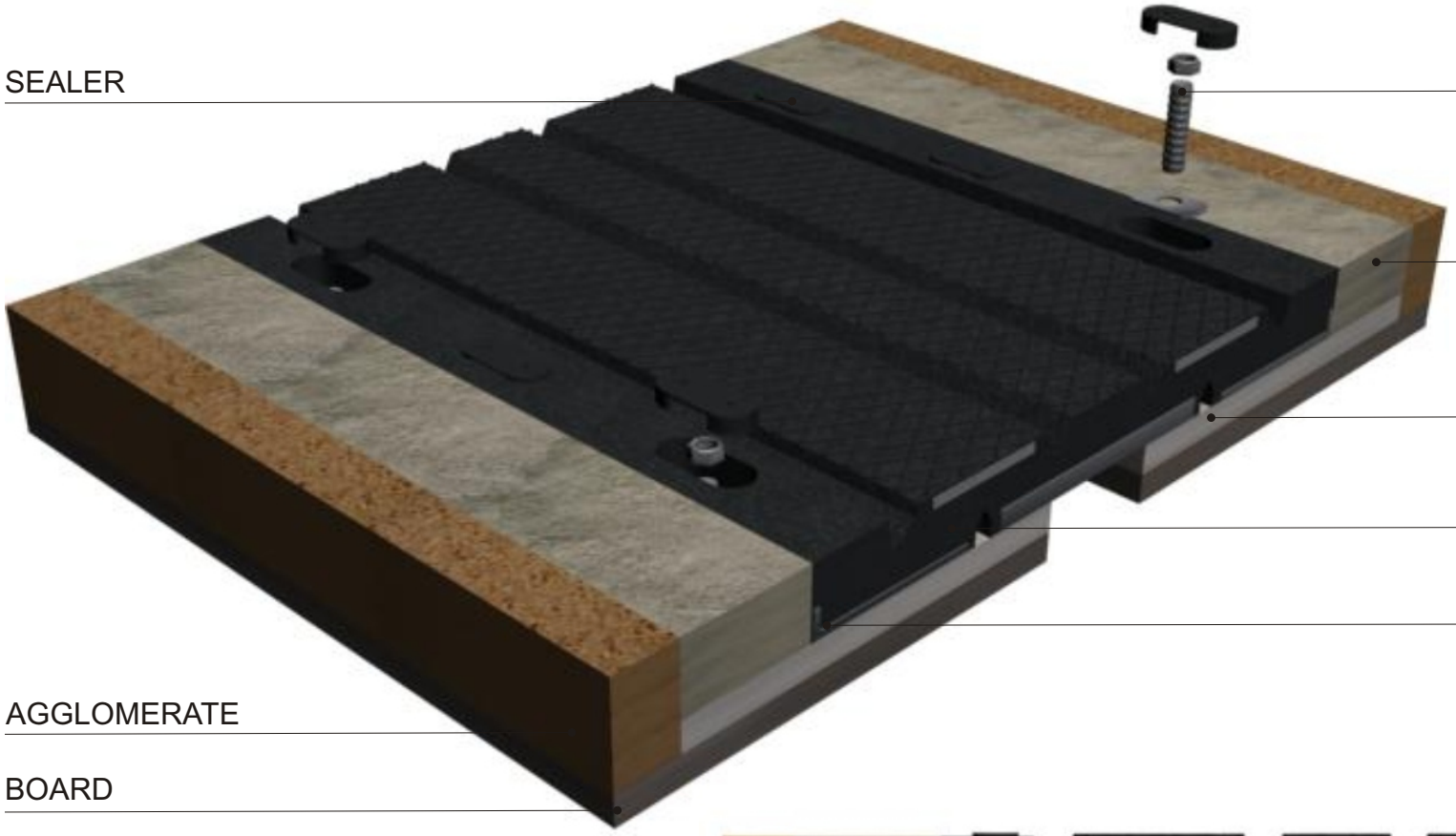
CAUCHOS JEMA, S.A.

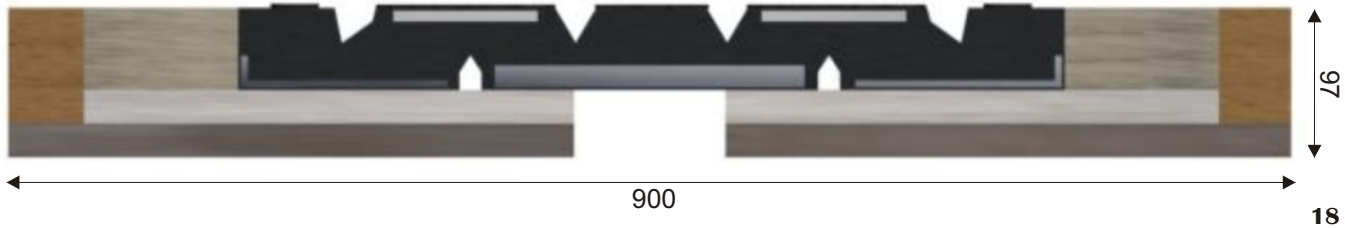




Junta PJ-6007

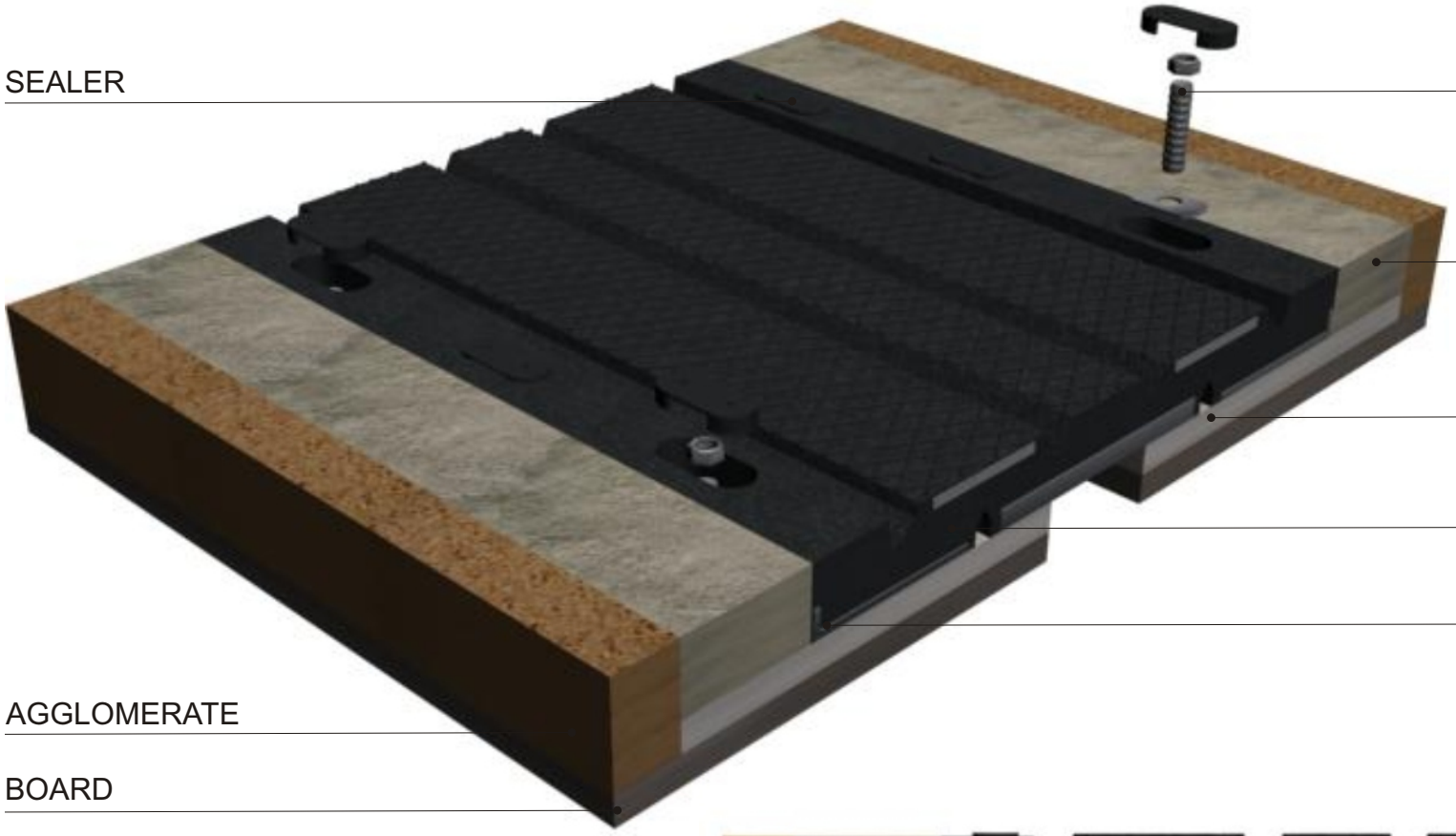
CAUCHOS JEMA, S.A.

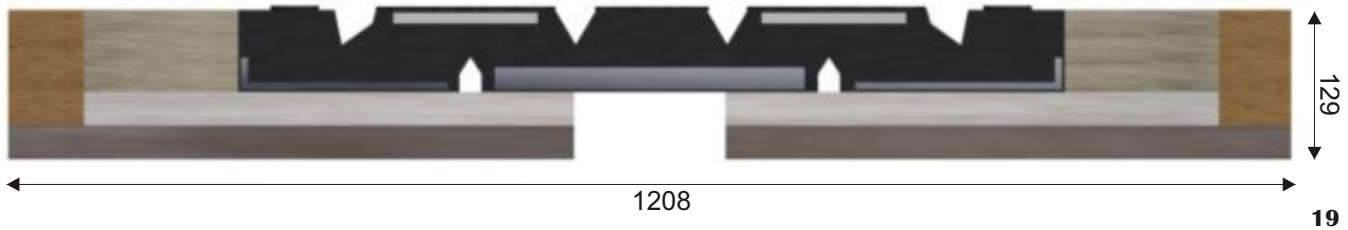




Junta PJ-6008

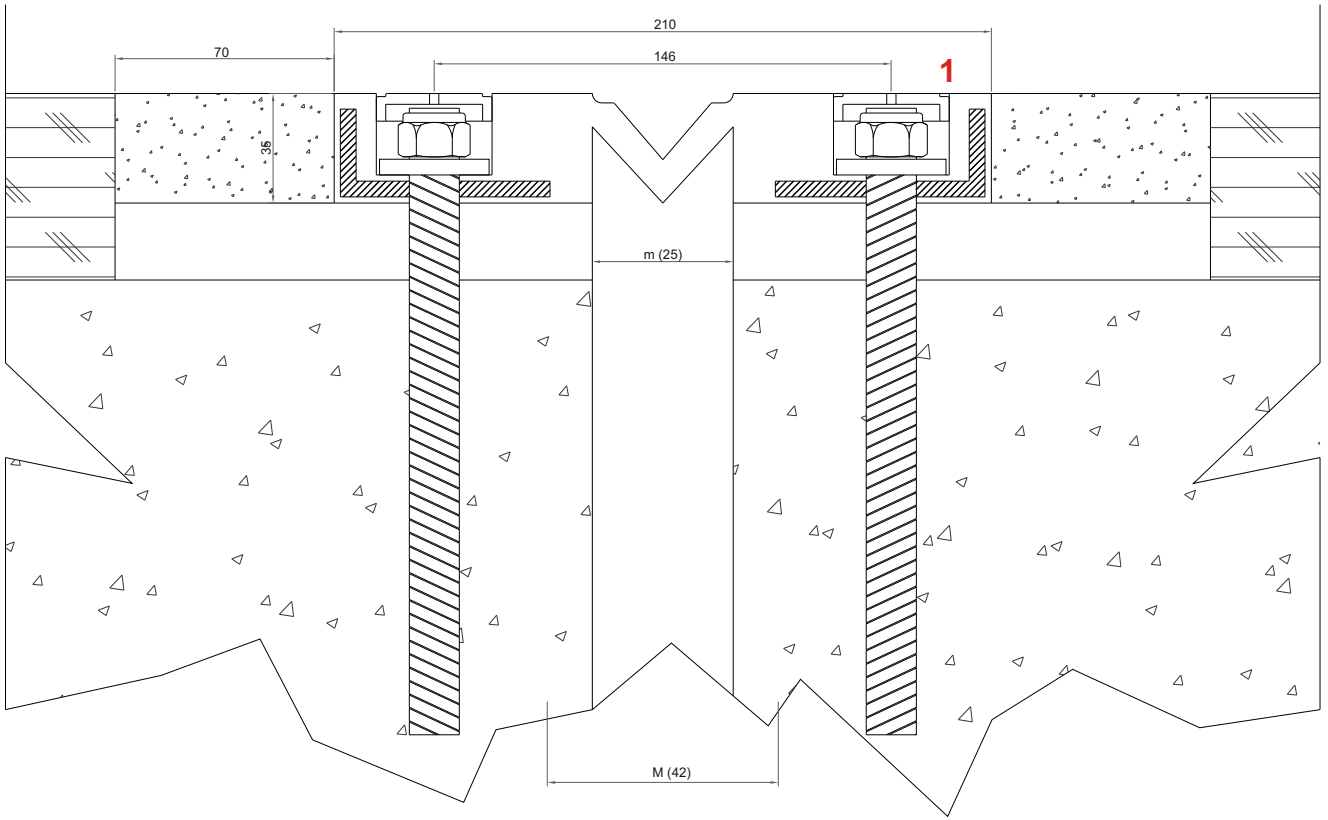
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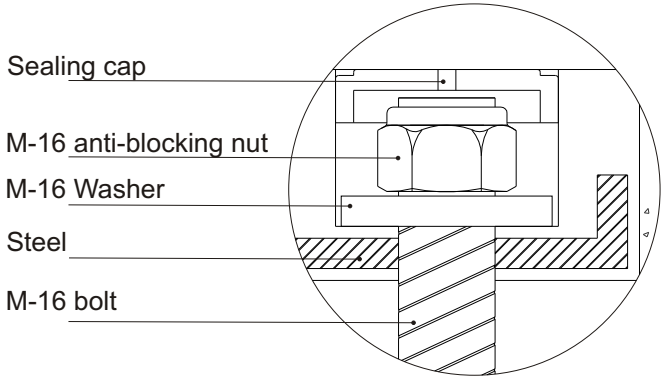




Details of board PJ-6000

Movement 50 mm





Detail 1

Agglomerate

Side guard barrier mortar of epoxi resin

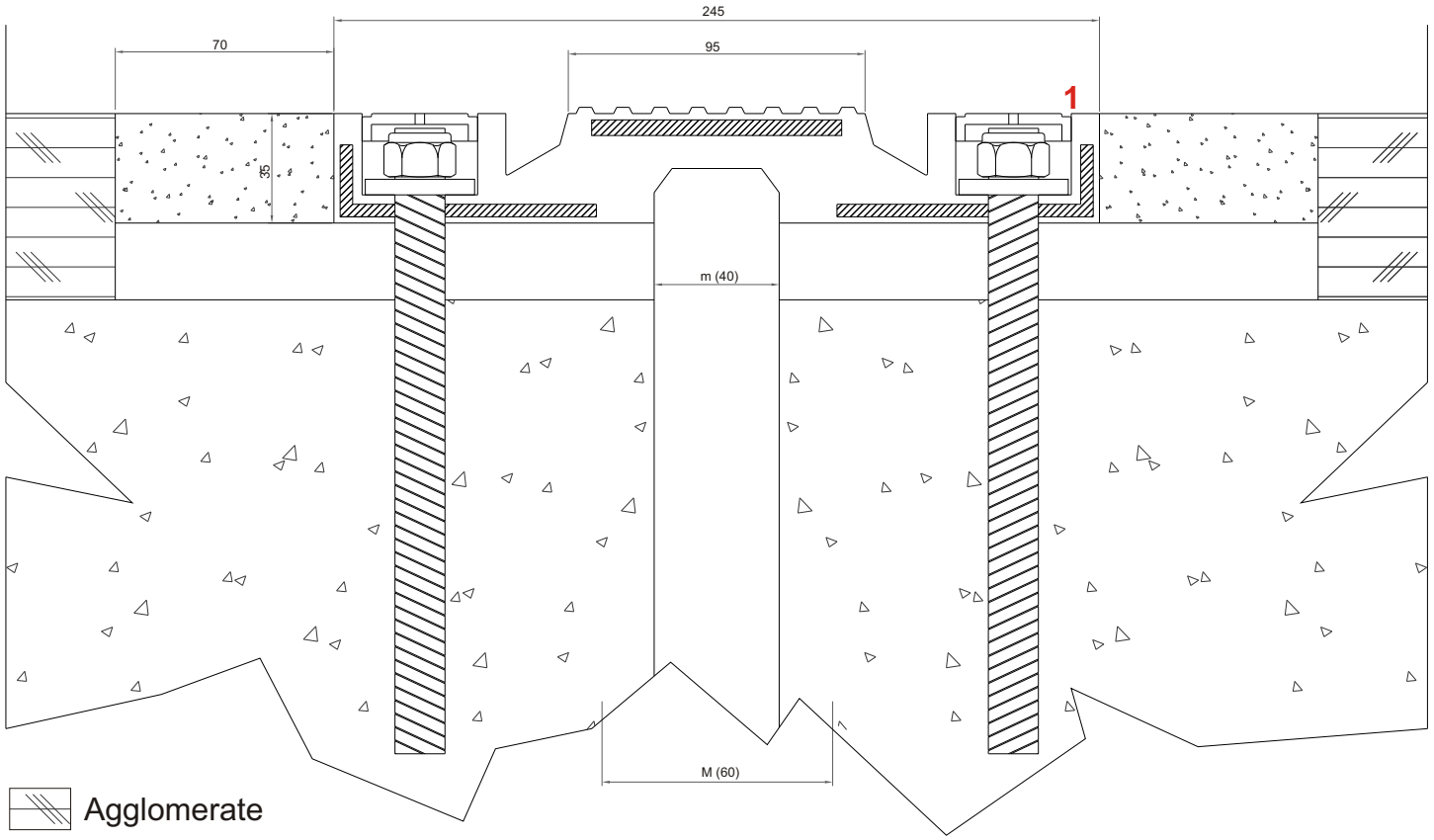
Leveling mortar

Board

m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

Details of board PJ-6001

Movement 40 mm



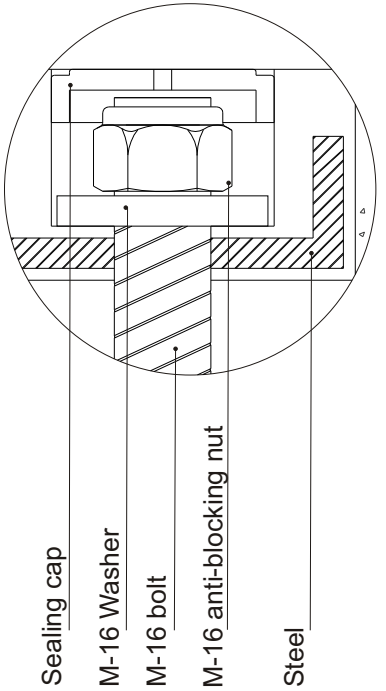
Agglomerate

Side guard barrier mortar of epoxi resin

Leveling mortar

Board

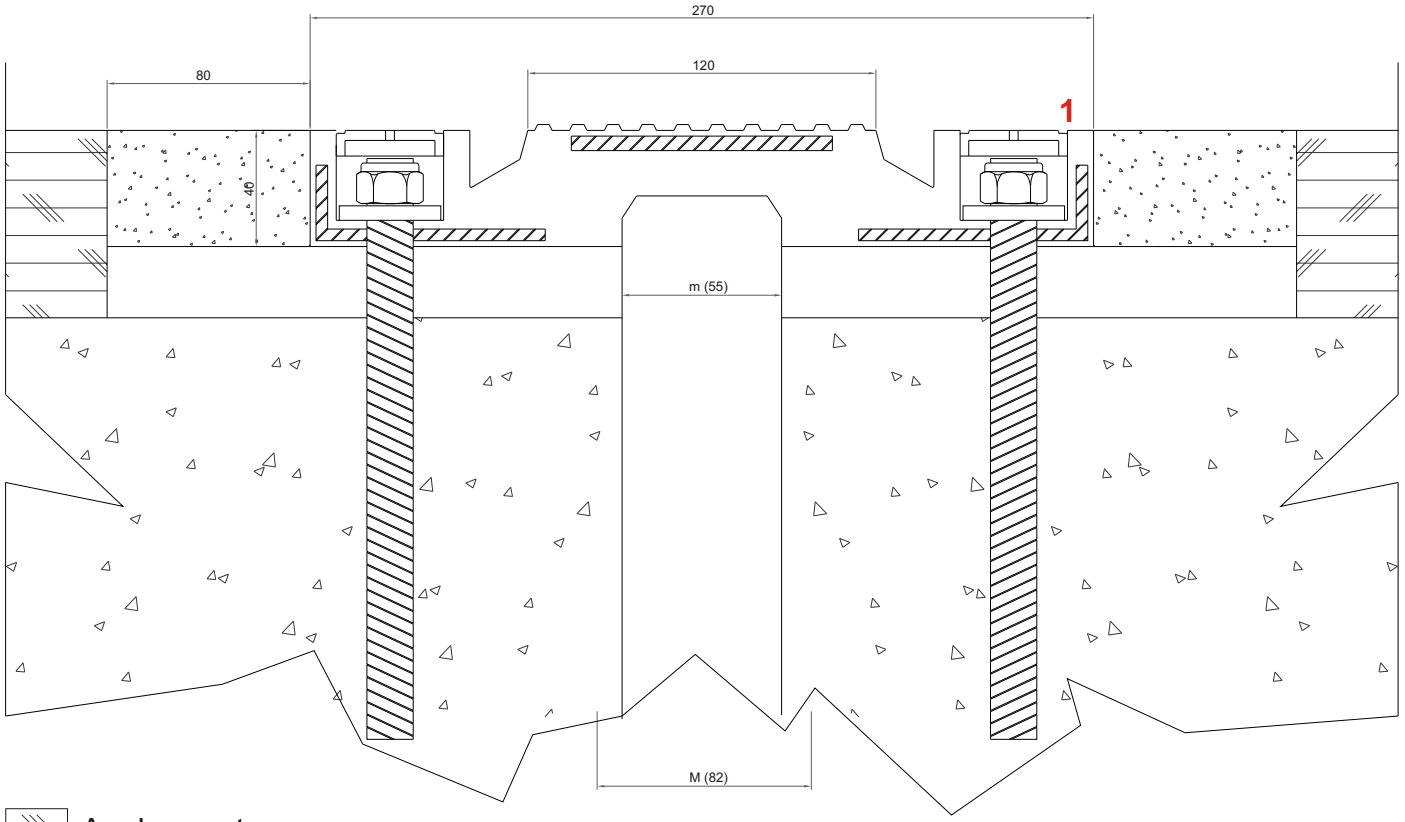
Detail 1

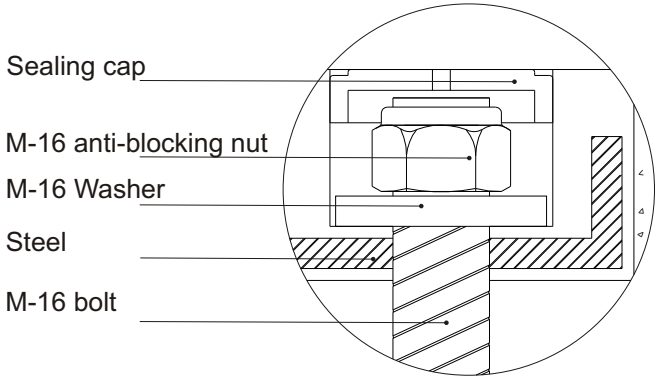


m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

Details of board PJ-6002

Movement 55 mm





Detail 1

Agglomerate

Side guard barrier mortar of epoxi resin

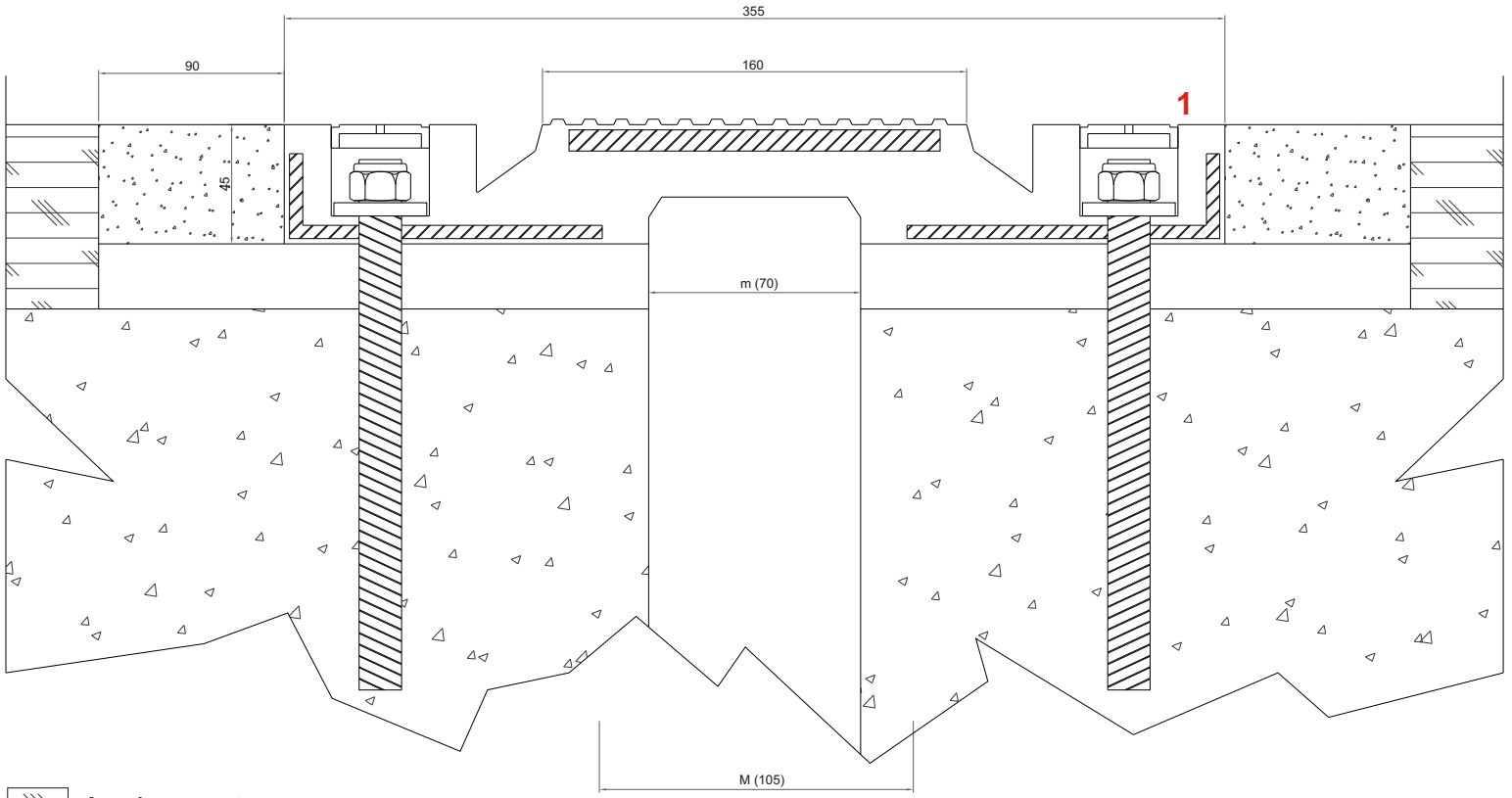
Leveling mortar

Board

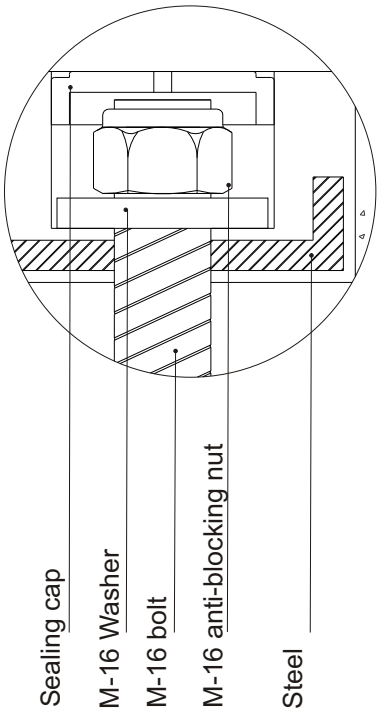
m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

Details of board PJ-6003

Movement 70 mm



Detail 1

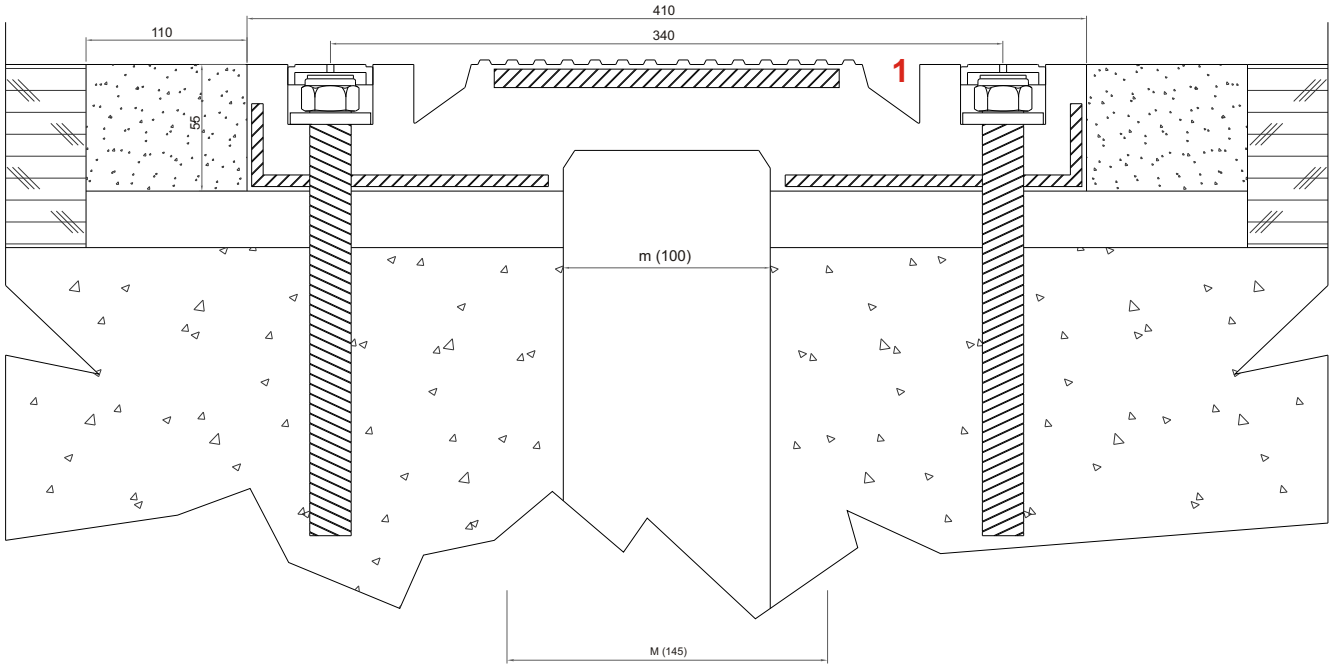


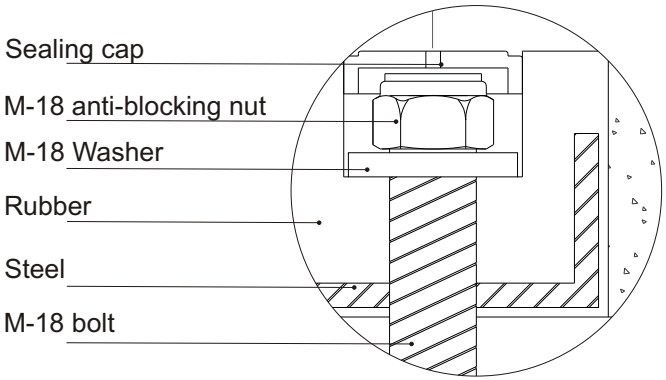
- Agglomerate
- Side guard barrier mortar of epoxi resin
- Leveling mortar
- Board

m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

Details of board PJ-6004

Movement 100 mm





Detail 1

Agglomerate

Side guard barrier mortar of epoxi resin

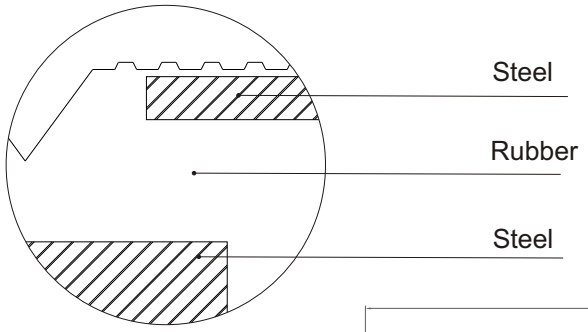
Leveling mortar

Board

m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

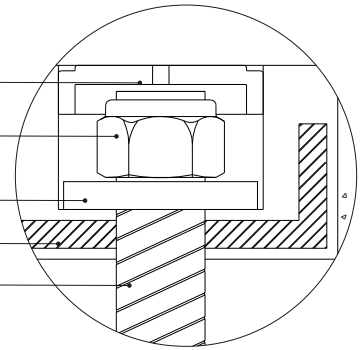
Details of board PJ-6005

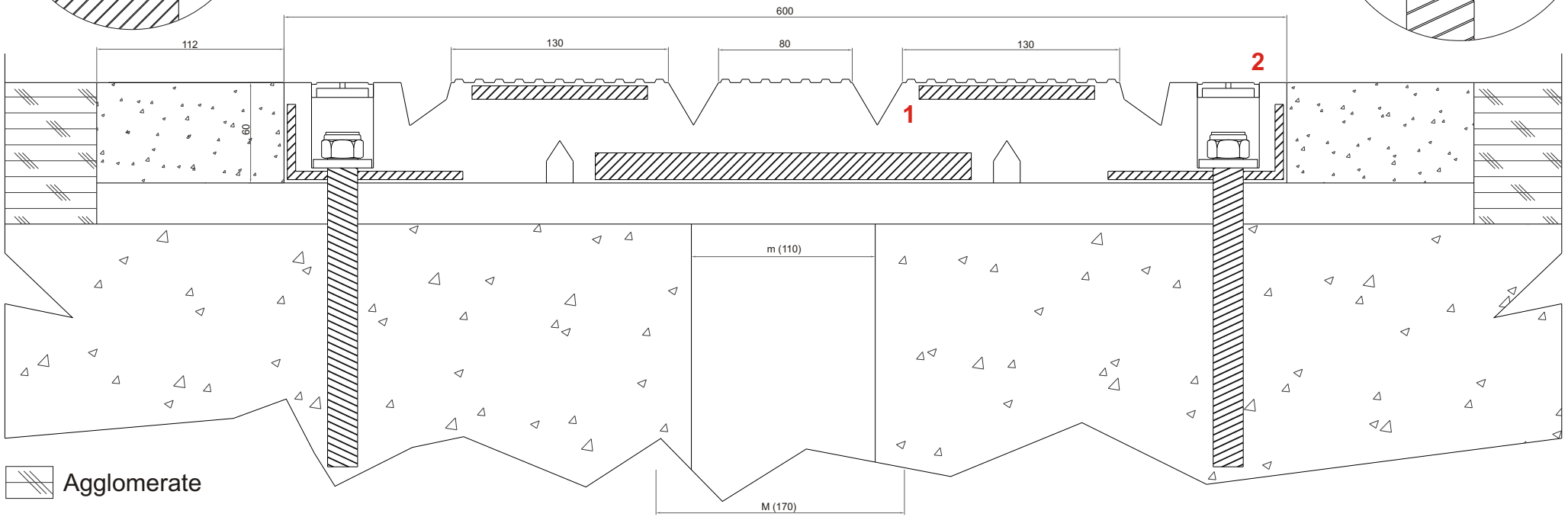
Movement 120 mm



Detail 1

Detail 2





Agglomerate

Side guard barrier mortar of epoxi resin

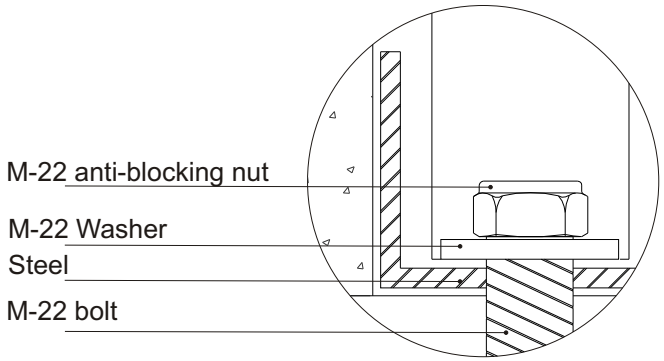
Leveling mortar

Board

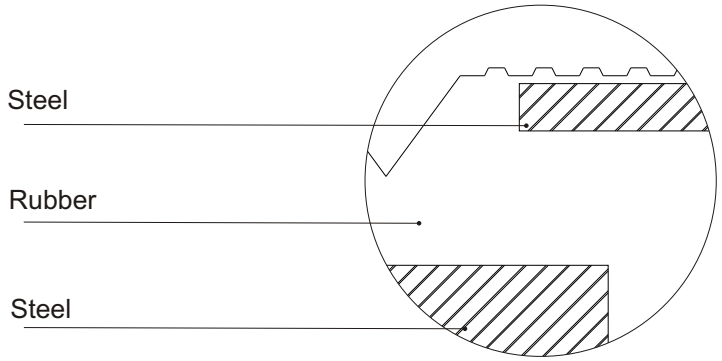
m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

Details of board PJ-6006

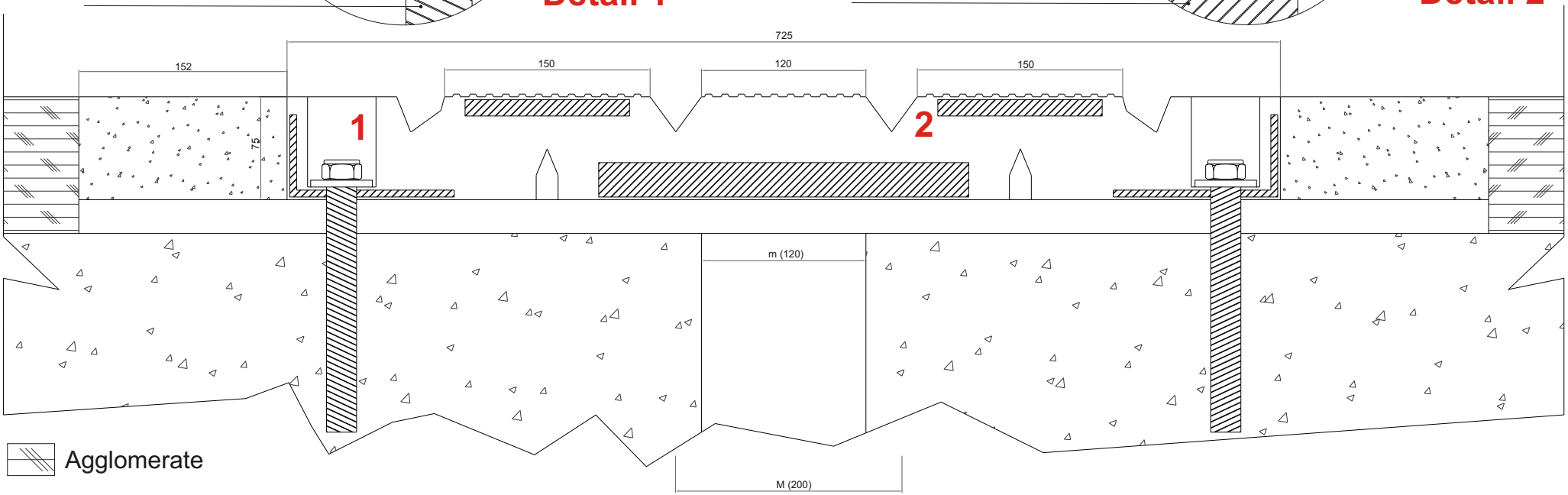
Movement 160 mm



Detail 1



Detail 2



Agglomerate

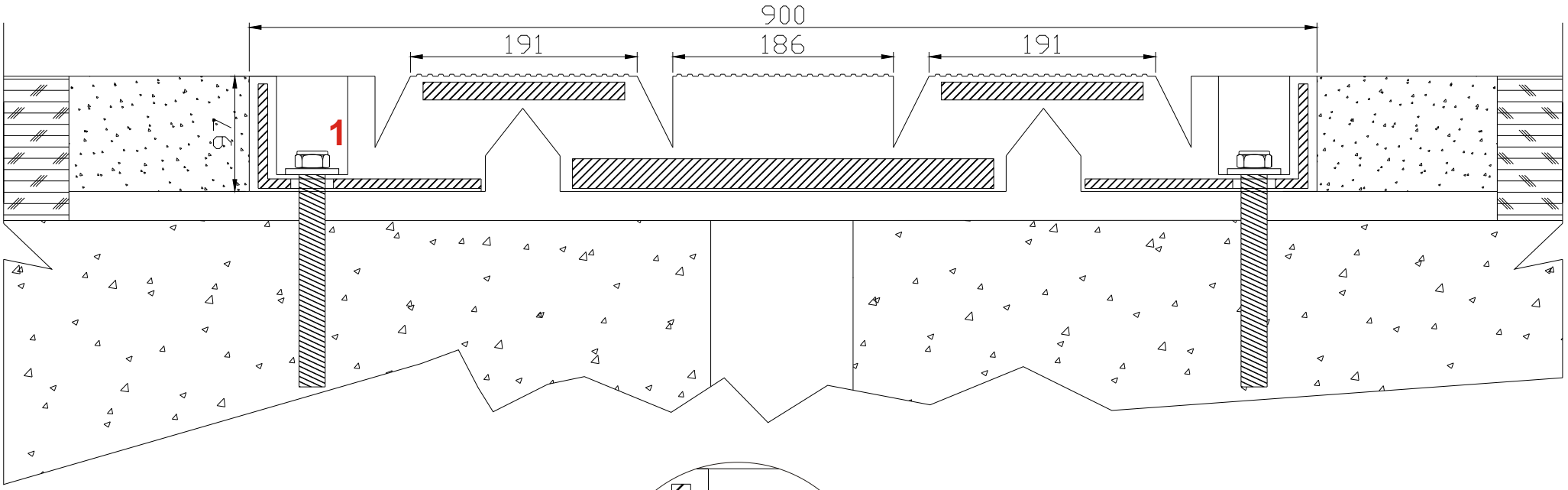
Side guard barrier mortar of epoxi resin

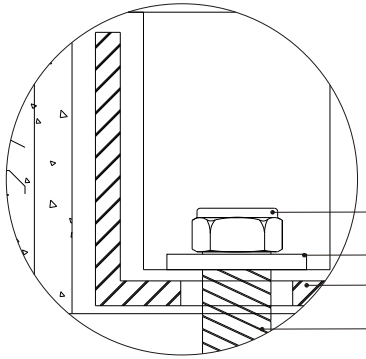
Leveling mortar

Board

m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

Detalle tablero PJ-6007 Movement 230 m.m





Detail 1

M-24 anti-blocking nut
M-24 Washer
Steel
M-24 bolt

Agglomerate

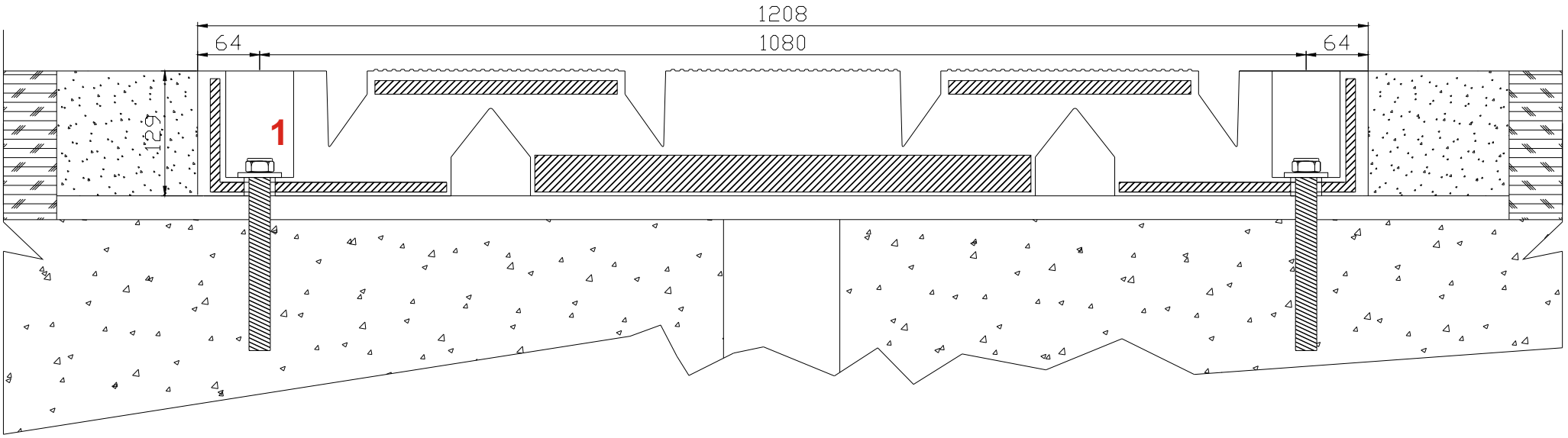
Side guard barrier mortar of epoxi resin

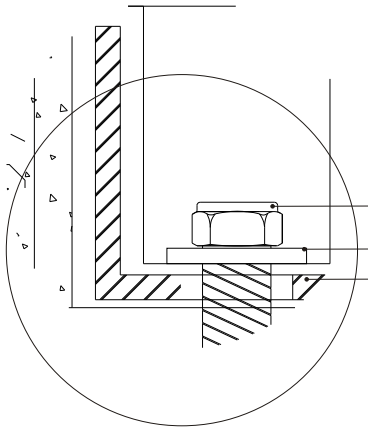
Leveling mortar

Board

m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

Detalle tablero PJ-6008 Movement 330 m.m





Detail 1

M-24 anti-blocking nut
M-24 Washer
Steel
M-24 bolt

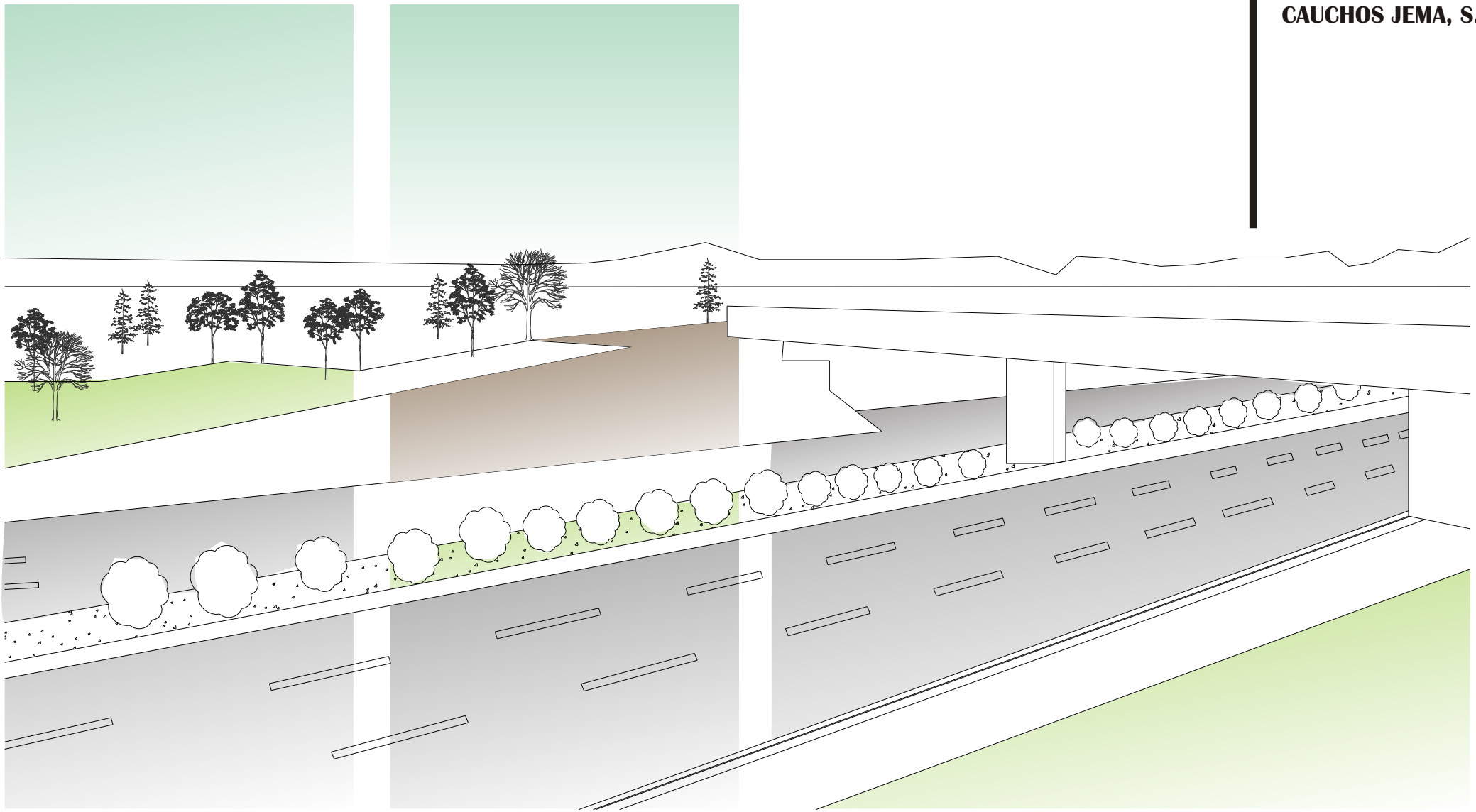
Agglomerate
Side guard barrier mortar of epoxi resin
Leveling mortar
Board

m= Maximum opening at medium temperature m.m
M= Maximum opening m.m

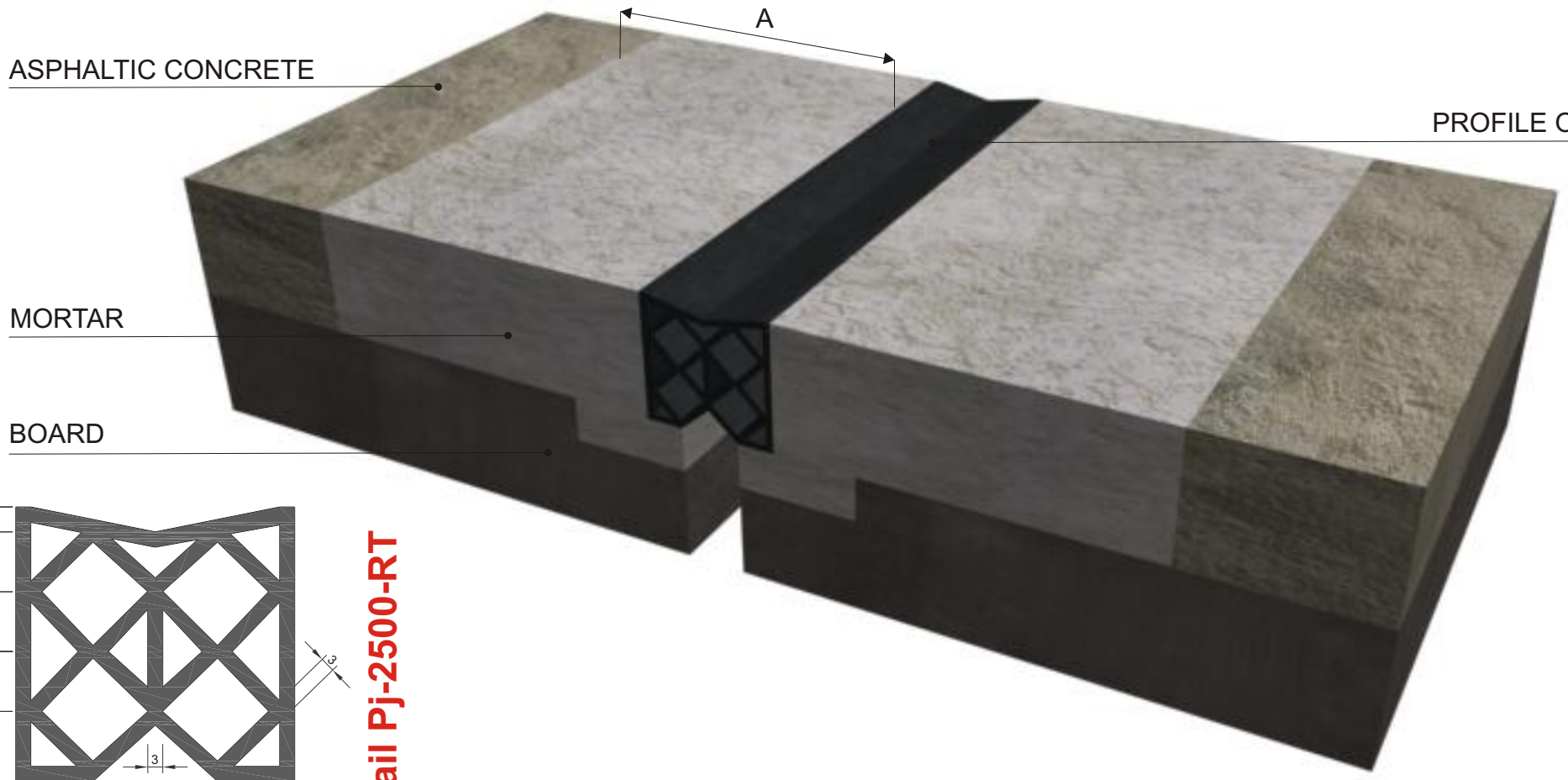
Profiles of compression

JEMA®

CAUCHOS JEMA, S.A.



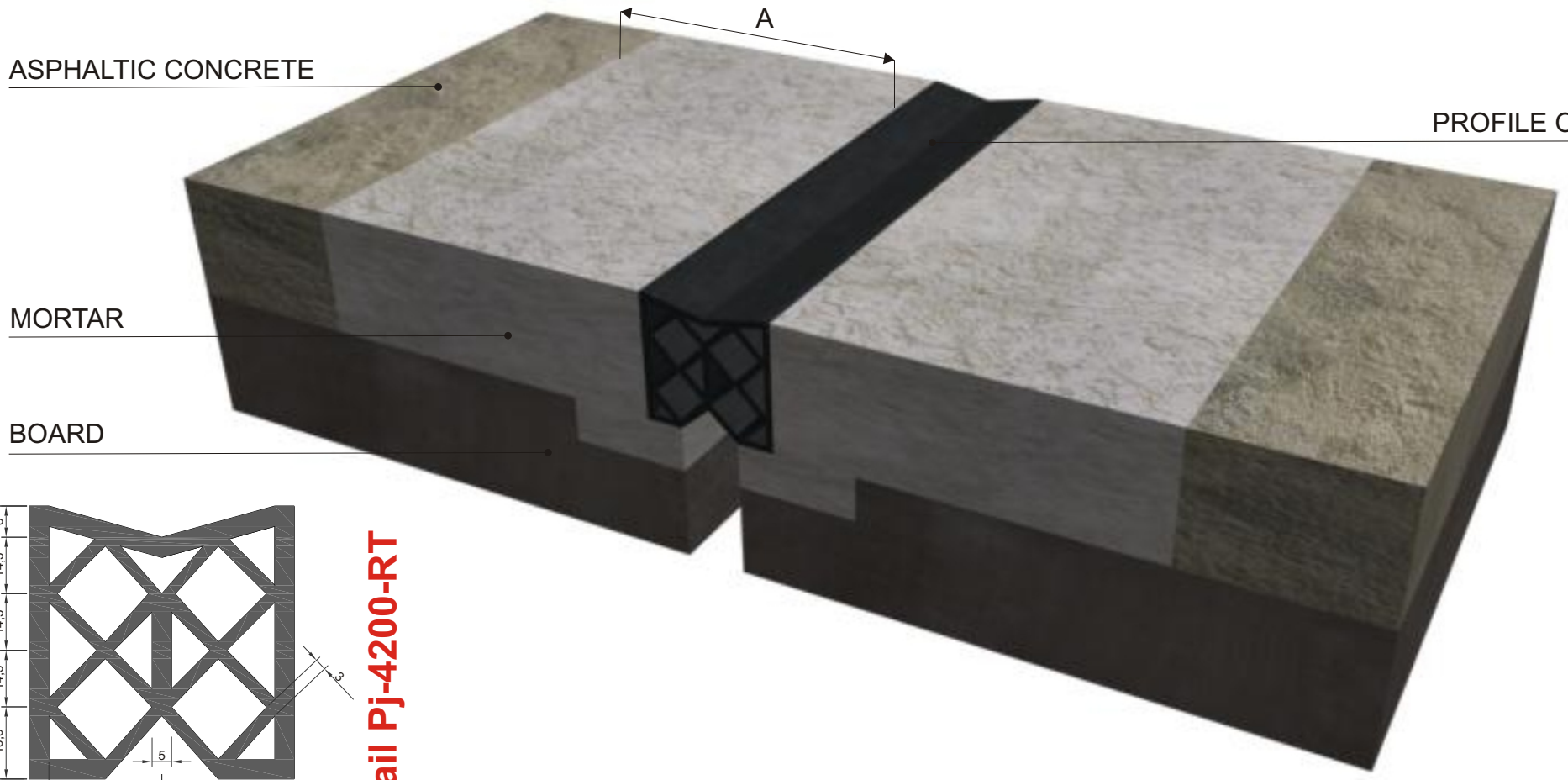
PJ-2500-RT



Detail Pj-2500-RT

For cases in which thickness of agglomerate exceeds 10 cm the width a of the joint must be increased in the proportion of 1,2 cm for each centimeter of thickness.

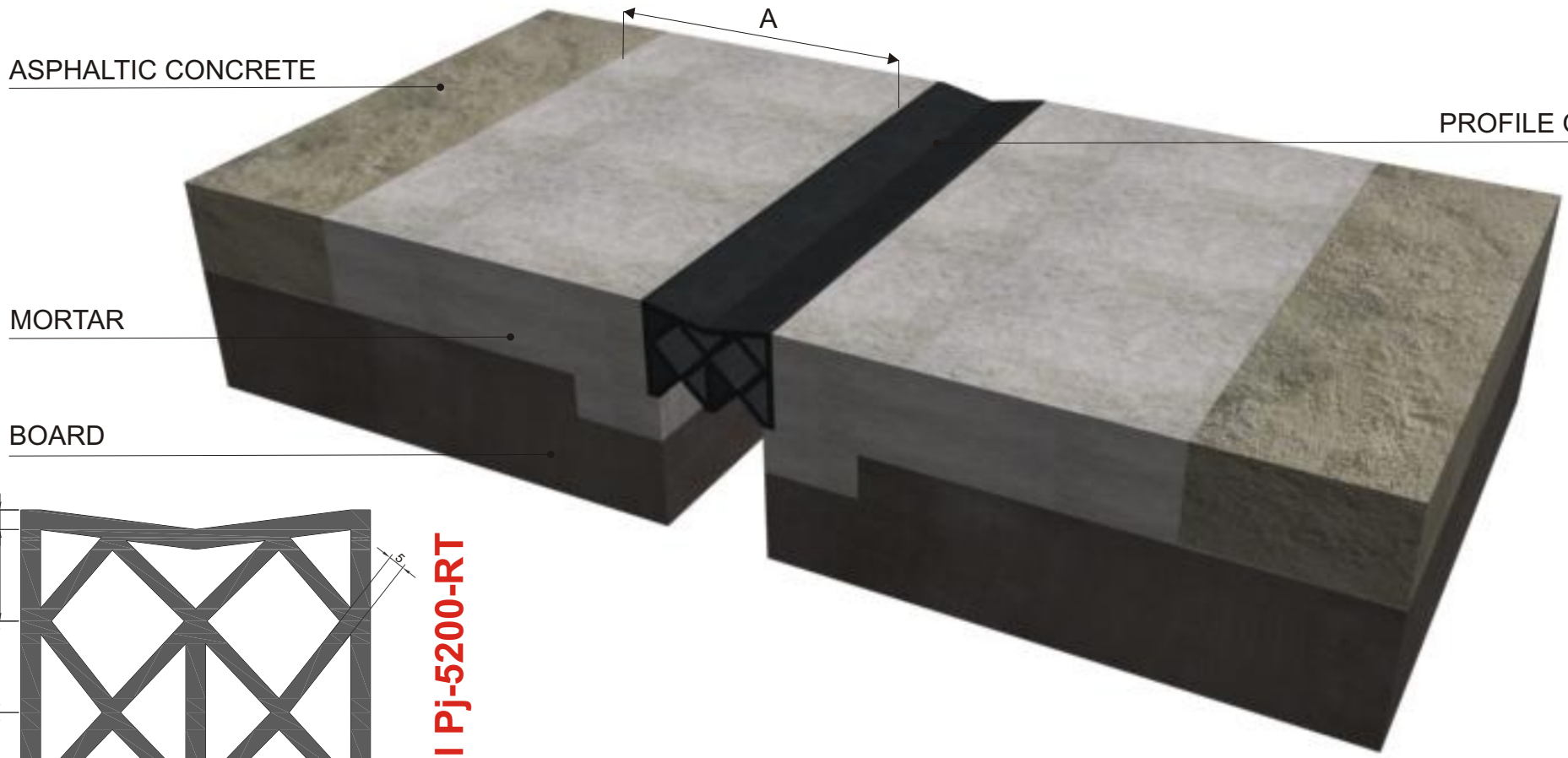
PJ-4200-RT



Detail Pj-4200-RT

For cases in which thickness of agglomerate exceeds 10 cm the width a of the joint must be increased in the proportion of 1,2 cm for each centimeter of thickness.

PJ-5200-RT



Detail Pj-5200-RT

For cases in which thickness of agglomerate exceeds 10 cm the width a of the joint must be increased in the proportion of 1,2 cm for each centimeter of thickness.

Certification ISO 9001-2008



BUREAU VERITAS Certification

Certification

Awarded to

CAUCHOS JEMA, S.A.

MADRID

C/ ÁLAMO, 4, POL. IND. EL ALAMO, 28970, HUMANES DE MADRID,

Bureau Veritas certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

STANDARD

ISO 9001:2008

SCOPE OF SUPPLY

MANUFACTURING AND MARKETING OF RUBBER AND METAL-RUBBER VULCANIZED PARTS FOR DE AUTOMOBILE, CIVIL WORKS AND OTHER INDUSTRIES.

Original Approval Date : **18 June 2001**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until :
11 July 2014

To check the validity of this certificate please call : 91 270 22 00
Further clarification regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation

Certificate Number ES035304 *Date:* 12 July 2011

Managing office: **BUREAU VERITAS CERTIFICATION SA**
Issuing office: **BUREAU VERITAS CERTIFICATION SA**
C/ Valportillo Primera 22-24
Edificio Caoba, Pol. Ind. La granja
28108 Alcobendas Madrid

ENAC CERTIFICACIÓN Nº 04/C-SC004



BUREAU VERITAS Certification

Certificación

Concedida a

CAUCHOS JEMA, S.A.

MADRID

C/ ÁLAMO, 4, POL. IND. EL ALAMO, 28970, HUMANES DE MADRID,

Bureau Veritas certifica que el Sistema de Gestión de dicha Organización ha sido auditado y encontrado conforme con las exigencias de la norma:

NORMA

ISO 9001:2008

El Sistema de Gestión se aplica a:

FABRICACIÓN Y COMERCIALIZACIÓN DE PIEZAS VULCANIZADAS DE CAUCHO Y CAUCHO-METAL PARA AUTOMOCIÓN, OBRA PÚBLICA Y CIVIL E INDUSTRIA EN GENERAL.

Fecha de certificación inicial: **18 Junio 2001**

Siempre que se mantengan las condiciones de aplicación del Sistema de Gestión, este certificado es válido hasta el:
11 Julio 2014

Para comprobar la validez del certificado puede llamar al teléfono: 91 270 22 00
Para cualquier aclaración sobre el alcance del certificado y la aplicación de los requisitos del Sistema de Gestión pueden ponerse en contacto con la organización.

Número del Certificado ES035304 *Fecha* 12 Julio 2011

Managing office: **BUREAU VERITAS CERTIFICATION SA**
Issuing office: **BUREAU VERITAS CERTIFICATION SA**
C/ Valportillo Primera 22-24
Edificio Caoba, Pol. Ind. La granja
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ENAC CERTIFICACIÓN Nº 04/C-SC004



CAUCHOS JEMA, S.A.

Factory and offices:

Polígono Industrial “EL ÁLAMO”
Calle Álamo, 4 • 28970 Humanes
(Madrid)- SPAIN

Tfno. +34 91 604 90 34
+34 91 604 89 71
Fax +34 91 604 89 62

E-mail: mdgutierrez@cim.es
www.cauchosjema.com