

Adhesive fastening of solid wood flooring boards

on various subfloor constructions



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- **Instruction manual**
- **Recommendations**
- **Technical datasheets**

Underfloor Heating System Heating-up protocol

(With reference to European Standard EN 1264 Part 4, Para 4.4)

European Standard EN 1264 requires the leak test and initial heat-up to be recorded and documented. This form is designed for this purpose and will also act as quality checking device to assist in any future queries.

Client/address:.....

Project/area/room:

This function test has to be carried out on all heated floors. For Solid Floors with Cement screeds this must wait until 21 days have elapsed after the screed has been laid. In case of Anhydrite / Calcium Sulphate screeds the elapsed time shall be 7 days from the date of laying,

Type of screed (cementitious/concrete, anhydrite/calcium sulphate, ...):

Screed thickness (cm, mean value):

Screed laying completed (date) :

Initial Heating-up Procedure (function test) (date):

The initial water flow temperature shall be maintained at +25 °C for 3 days.

First Heating Series

1 st day (*22 nd)	heat-up to flow temp. +25 °C	yes/no
2 nd day (*23 rd)	heat-up to flow temp. +30 °C	yes/no
3 rd day (*24 th)	heat-up to flow temp. +35 °C	yes/no
4 th day (*25 th)	heat-up to flow temp. +40 °C	yes/no
5 th day (*26 th)	heat-up to flow temp. +45 °C	yes/no
6 th day untilday	continuously heated at a constant flow temp. of +45 °C	yes/no
from day ... until day	flow temp. gradually decreased by 5°C/day until +25 °C final	yes/no

Second Heating Series

from dayuntil day.....	up/down-procedure repeated as above	yes/no
day.....	heating switched off	yes/no
day.....	start of laying the flooring at surface temp. + 15° C	yes/no

* day after screed laying completed (cement/concrete screed)

The rooms have been ventilated during the entire increasing-/decreasing cycle, avoiding a draught. The heated screed has been clear of any coverings, scrap etc.

The underfloor heating will be held constantly at + 25 °C flow temp. until laying, sanding and finishing/sealing works are finished. After 5 – 7 days the underfloor heating can be switched over to regular operation.

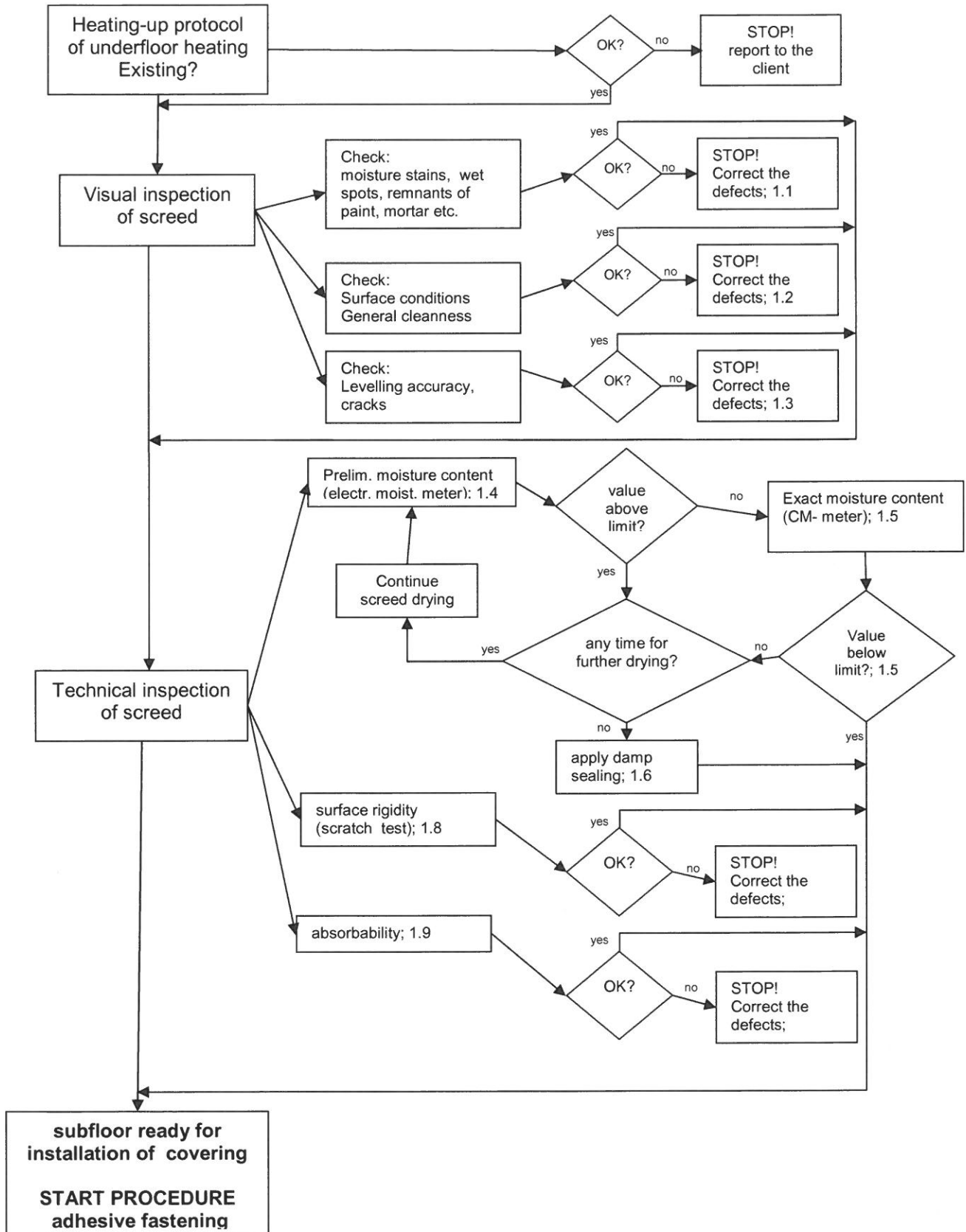
The prevailing climatic conditions in the rooms should be held at approx. 20 °C +/- 2 °C and 50 – 60 % r. H. This will have a positive, lasting influence on the dimensional stability of wooden floorings.

Please confirm the warm/up procedure was carried out in accordance with above by signing below.

	Name (print)	Name (signature)	Date
Installer			
Client/Client's representative			

A) Adhesive fastening of solid wood flooring boards on cementitious/concrete- or anhydrite-screeds (underfloor heated)

Check: Subfloor ready for installation of flooring?



A) Subfloors of cementitious/concrete- or anhydrite- screeds

Checking the subfloor preparation

Check: heating-up protocol existing? → if not OK:

The installation of the screed and the floor heating must be done according to the instructions of the supplier of the floor heating and of the screed. If the screed is newly laid, please follow the instructions of your heating installer.

EN 1264-4:2009 requires the documentation of the heating-up procedure. A heating-up protocol must be available and should be asked for. Report to the client.(see attached form sample)

Don't start with the installation of any covering until a heating-up protocol has been produced.

1.1 Check: moisture stains/ wet spots, remnants of paints/ mortar → if not OK:

Moisture stains / wet spots:

After the required screed drying time, which may range from a few days up to several weeks, the moisture content (M.C.) of the screed has to be determined by an electric moisture meter (see 1.4). Continue actions acc. to flow-chart 1.4.

Remnants of wall paints, mortar or plaster:

Remove remnants from the slab with a paint-scraper, trowel or chisel. Remove the debris and dust carefully (broom, vacuum cleaner).

1.2 Check: surface conditions, general cleanness → if not OK:

The slab has to be clean of dust and debris as good as possible. Unremovable dust should be fixed with primer BONA D501. Please check the attached Technical datasheet carefully.

1.3 Check: levelling accuracy, cracks → if not OK:

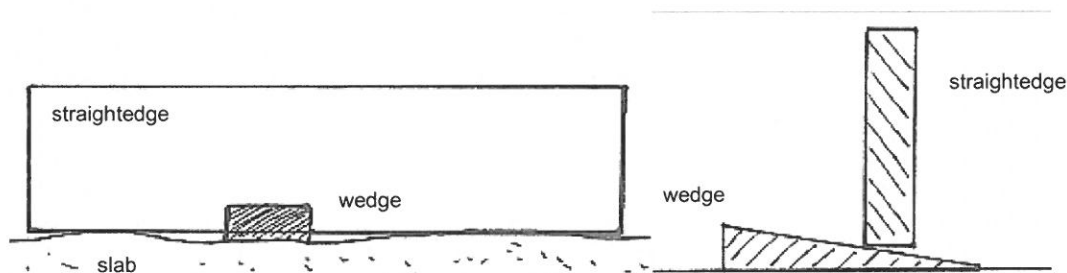


Fig.1. Levelling devices

Apply BONA H600 (self-levelling compound) for levelling and smoothing the slab. Please check the attached Technical datasheet carefully. We recommend to apply a primer (BONA D510) prior to the levelling.

If there are any cracks in the slab, we urgently ask you to contact an expert for advice.

If you detect any defect in the slab (screed), you should immediately inform in writing the client and/or the architect. Otherwise, work you have already done, such as filling the cracks or applying the levelling compound, might not be paid. This is not applicable to the final smoothing sanding of the slab surface.

1.4 Measuring the moisture content M.C.

→ **Electrical moisture meter (rough measurement):**



Fig.2. Types of electrical moisture meters

By using an electrical moisture meter first, you will get a rough indication of the M.C. and you can detect the wet spots on a slab. There are different electrical moisture meters on the market. The exact determination of the M.C. has to be done by CM-meter. If the slab is too wet, it doesn't make sense to continue measuring with a CM-meter before having dried the slab properly.

Note: Underfloor heating elements may distort the measuring result!

1.5 Moisture measurement by Carbide moisture meter (CM-meter) → (precise measurement):

In order to get a proper CM-measuring value, you should find a representative wet spot on the slab. The above described electrical moisture meter (see 1.4) is a suitable device in searching for it.

In case of underfloor heated slabs, the measuring points – that is, where to take the CM-sample - must have been marked by the screed layer. If there are no markings, the client should be informed of the risk of seriously damaging the radiant system beneath when taking the sample. A decision has to be taken how to proceed.

All covered screeds must have been properly dried before applying any covering. The maximum allowable CM-value (Tab.1) depends on the type of screed and the slab construction (underfloor heating: yes/no).

Tab.1. Maximum allowable CM-value

type of screed	CM-% maximum
Cementitious screed, unheated	1,8%
Cementitious screed, underfloor heated	1,5%
Anhydrite screed, unheated	0,5%
Anhydrite screed, underfloor heated	0,3%



Fig.3. Carbide moisture meter: case, tools and device

A proper CM-measurement starts up with the right sample take. At the defined or marked spot on the slab, a representative sample is taken with a chisel. The screed sample should be of one piece and represent the whole cross section of the slab. This requires a sample area which is large enough for the sample take. Too small samples and material from conical holes are critical, as you always will get lower (false) M.C.-values than actually existing, due to lack of material for the chemical reaction in the CM-meter.

The sample is now crushed/ pounded and weighed immediately. The amount of the testing material depends on the expected M.C.-value and the type of screed material. Assuming a properly dried screed, with cementitious / concrete material a mass of 50 grams is recommended, and with anhydrite material 100 grams. Fill the crushed material into the steel bottle, put in the steel balls and the carbide ampoule and lock the bottle tightly. Now the measurement makes you work up a sweat: Start on shaking the bottle for two minutes, let it stand until minute five, shake it one more minute, and leave it stand until minute ten, shake it once more for some seconds and read the manometer immediately.

Find the CM-value in the enclosed table as a function of material mass (weight) and the pressure-value (manometer).

Finally, you should control the testing material once more. Has the screed material been crushed sufficiently? The test is not valid, if there are left visible splinters of the ampoule-glass or unbroken, coarse pieces of the screed material.

Another problem might occur, when special additives (e.g. accelerators) have been added to the screed material; as a consequence, the measuring value might be wrong. In that case you should contact the screed laying contractor.

1.6 Applying a damp barrier (sealing)

If the slab is not as dry as required, you could achieve an improvement by applying a damp-barrier (BONA R580 primer - sealer). Please study the attached Technical datasheet carefully.

Attention: Damp-barriers must not be applied upon anhydrite screeds.

1.8 Surface rigidity

A “grid-scratch-test” is used to determine the rigidity of the screed surface. The apparatus looks like a ballpoint-pen with a steel tip. Inside the pen housing, a spring is pressing to the steel tip with a determined force, adjusted to the hardness of the surface. There are 3 pressure levels adjustable, depending on the hardness of the surface. Now, the surface is scratched with the pen by guiding it in a metal grid pattern. Then the pattern is turned at an angle of 60 degrees and another scratch is taken. The result can be read on the cross-points of the carved pattern in the screed surface. If the crossing points are clear, the surface rigidity is ok. If the crossing points are broken or/and the scratches are dull, the surface is not ok.



Fig.4. Scratching tool (pen and steel pattern) Fig.5. Scratch test OK (above), not OK (under)

Special attention should be paid to so-called “sintered” skin layers, especially on anhydrite surfaces. The sintered layer must be removed by sanding before installing the covering. Please follow the instructions of the screed layer carefully.

1.8.1 Scratch test not OK

If the scratch test does not produce a satisfying result, you should contact the screed layer. A good solution might be the application of an epoxyde resin sealer (BONA R410 recommended). Please follow the instructions of the attached Technical datasheet very carefully.

1.9 Absorbability

As a simple test, the absorbability of a slab surface can be determined easily by dripping some drops of water upon the surface. If the water drops are not absorbed and remain on the surface, the surface should be sanded until the absorbability is ok. Otherwise, primers, fillers and adhesives cannot combine with the slab material and applied flooring elements could become detached.

Laying an adhesive fastened wood flooring

If possible, start with the installation of the flooring from the wall opposite to a doorway. In this way you will avoid stepping on the floor after laying the boards and the adhesive will be curing without further loading or stress.

First, you lay out three rows of the flooring boards without an adhesive applied („dry laying“), boards cut to length and the first row fitting to the profile of the wall. Keep a gap of approx. 10 – 15 mm between the first row and the wall for inserting wedges or spacers. At this point you still may inspect the boards with regard to specific colour variations, typical wooden imperfections or knots; you can use boards with imperfections at the beginning or at the end of a row. Damaged boards have to be sorted out. Mark the area of the first three rows for application of the adhesive, e.g. with a chalk line. Then, remove the boards from the slab and go ahead with the laying procedure:

Take out the adhesive (we recommend BONA R850) of the container with a toothed or notched trowel (e.g. BONA art.no. 1500G) and apply it across the marked area evenly. Follow the instructions of the attached Technical datasheet carefully.

The boards of the first row are now placed into the adhesive layer bed and firmly tapped down.

Use wedges or spacers to keep the gap between the wall and the first row of boards. Then, the next two or three rows can be laid. For straightening slightly bent boards we recommend to use a tension belt (Fig.6).

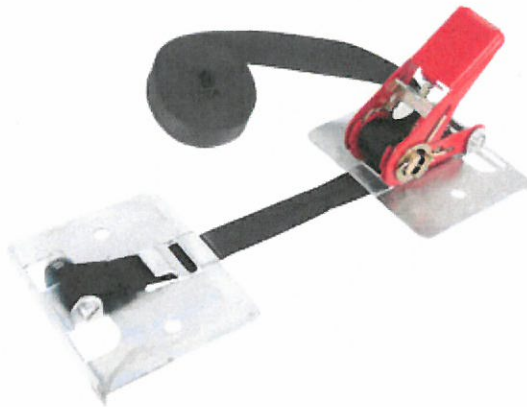


Fig.6. Tension belt (ratcheting strap)

Proceed laying the next three rows as shown above, and repeat this procedure till you have reached the opposite wall of the room. Check the straightness of the rows regularly. The last row has to be fit to the profile of the wall before applying the adhesive. Note the necessary gap between the last row and the wall. The last row must be installed tightly, using a proper tool, e.g. a pull bar (Fig.7). Finally, the last row should be fixed, using wedges or spacers.



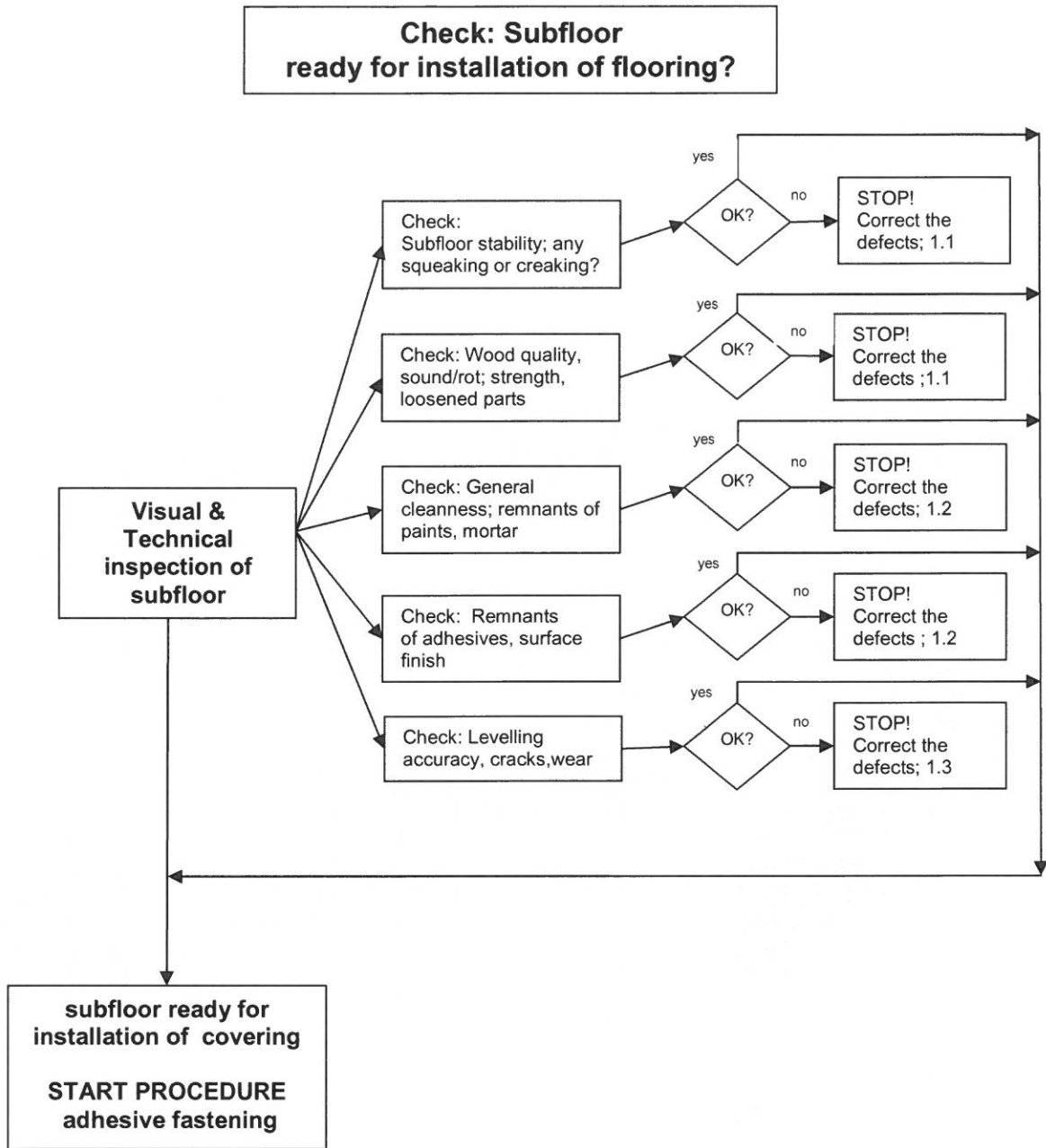
Fig.7. Pull bar

You should avoid unnecessary breaks, as the life of the applied adhesive is limited. Long waiting periods or breaks can cause imperfect bonding to the subfloor.

Make sure that the boards and the slab are joined tightly during the entire curing period of the adhesive. If necessary, use weights to press down the flooring,

Finally, you should inspect the flooring and remove remaining adhesive or something similar.

B) Adhesive fastening of solid wood flooring boards on subfloors of wood boards/OSB/particle boards/plywood



B) Subfloors of old solid wood boards / OSB- / particle board- / plywood sheets

Checking the subfloor preparation

1.1 Check: subfloor stability, noises, wood quality & strength → if not OK:

Subfloor stability, noises (squeaking or creaking):

The subfloor must have a sufficient load bearing construction. Loosened or moving parts which are causing squeaking or creaking must be fixed properly (screwing, adhesive fixing).

Wood quality & strength:

The wood must be sound and show sufficient load bearing capacity. Especially, all planks with obvious defects or decay must be removed and substituted.

1.2 Check: general cleanness, remnants of paint, mortar or adhesives surface finish on the subfloor → if not OK:

General cleanness:

The subfloor must be absolutely clean before an adhesive is applied (brush, vacuum cleaner). Especially, all dust has to be removed carefully.

Remnants of wall paints, mortar or plaster

Remove remnants of wall paints, mortar or plaster from the slab with paint-scraper, trowel or chisel. Remove the debris and dust carefully (broom, vacuum cleaner).

Remnants of adhesive or floor finish:

Remnants of adhesives of previous coverings or floor finishing on the subfloor must be removed carefully by sanding.

1.3 Check: levelling accuracy, cracks etc. → if not OK:

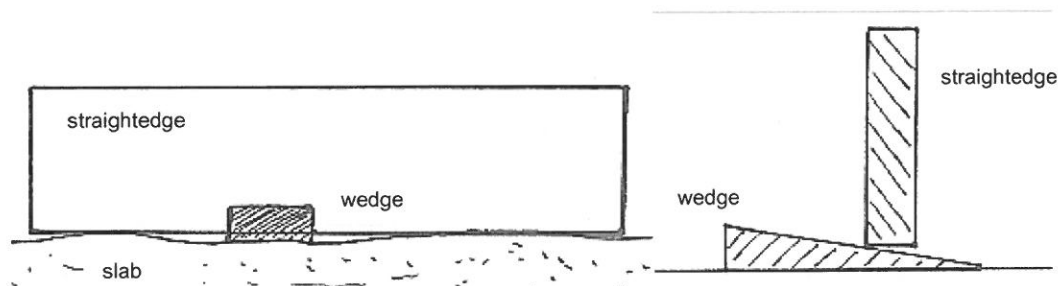


Fig.1. Levelling devices

If the subfloor is uneven, badly worn or not levelled sufficiently, you should contact an expert for advice.

If levelling or filling is necessary, we recommend to use BONA D510 for priming and BONA H600 + BONA fibres as a fibre-reinforced levelling compound. Please follow the instructions of the attached Technical datasheets very carefully.

Laying an adhesive fastened wood flooring

If possible, start with the installation of the flooring from the wall opposite to a doorway. In this way you will avoid stepping on the floor after laying the boards and the adhesive will be curing without further loading or stress.

First, you lay out three rows of the flooring boards without an adhesive applied („dry laying“), boards cut to length and the first row fitting to the profile of the wall. Keep a gap of approx. 10 – 15 mm between the first row and the wall for inserting wedges or spacers. At this point you still may inspect the boards with regard to specific colour variations, typical wooden imperfections or knots; you can use boards with imperfections at the beginning or at the end of a row. Damaged boards have to be sorted out. Mark the area of the first three rows for application of the adhesive, e.g. with a chalk line. Then, remove the boards from the slab and go ahead with the laying procedure:

Take out the adhesive (we recommend BONA R850) of the container with a toothed or notched trowel (e.g. BONA art.no. 1500G) and apply it across the marked area evenly. Follow the instructions of the attached Technical datasheet carefully.

The boards of the first row are now placed into the adhesive layer bed and firmly tapped down.

Use wedges or spacers to keep the gap between the wall and the first row of boards. Then, the next two or three rows can be laid. For straightening slightly bent boards we recommend to use a tension belt (Fig.6).



Fig.2. Tension belt (ratchetlashing strap)

Proceed laying the next three rows as shown above, and repeat this procedure till you have reached the opposite wall of the room. Check the straightness of the rows regularly. The last row has to be fit to the profile of the wall before applying the adhesive. Note the necessary gap between the last row and the wall. The last row must be installed tightly, using a proper tool, e.g. a pull bar (Fig.7). Finally, the last row should be fixed, using wedges or spacers.



Fig.3. Pull bar

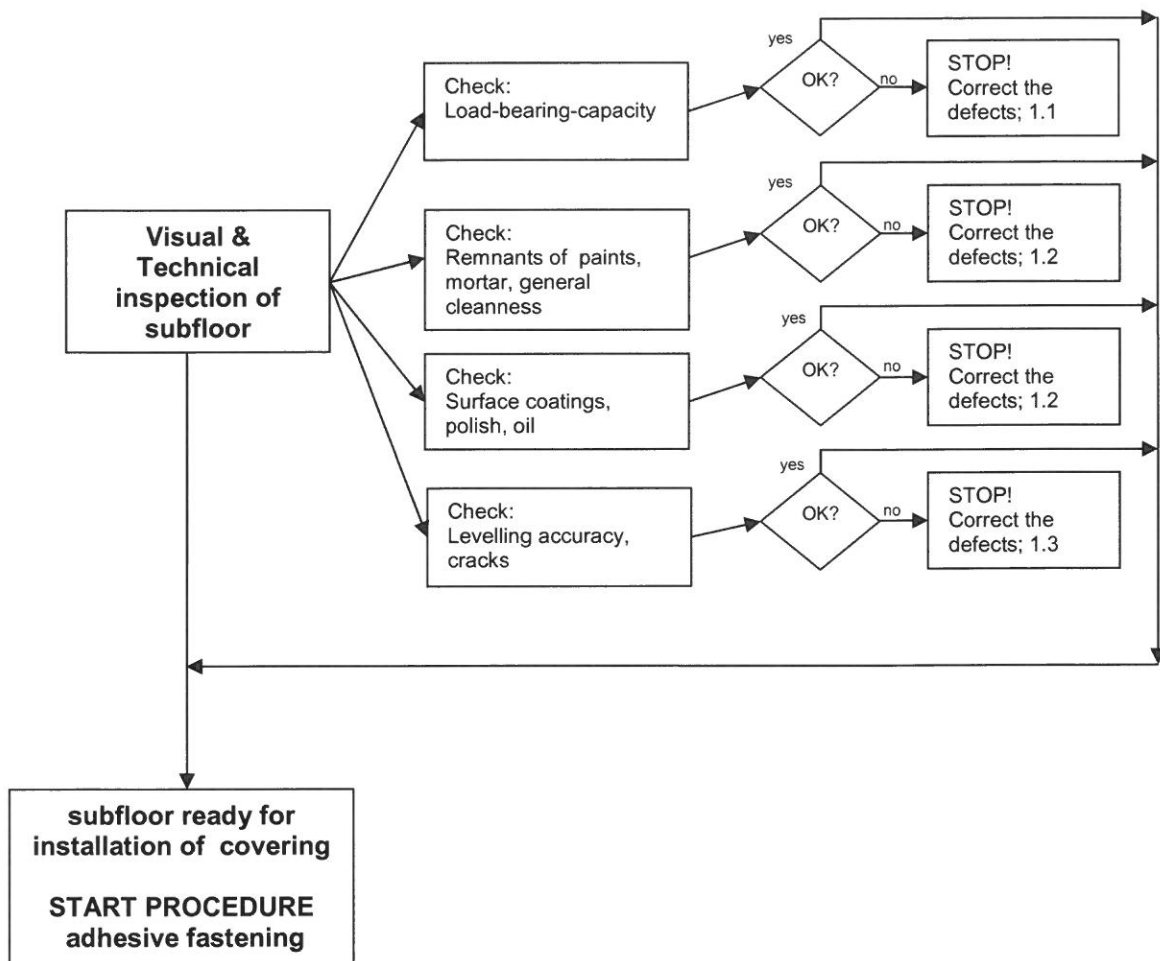
You should avoid unnecessary breaks, as the life of the applied adhesive is limited. Long waiting periods or breaks can cause imperfect bonding to the subfloor.

Make sure that the boards and the slab are joined tightly during the entire curing period of the adhesive. If necessary, use weights to press down the flooring,

Finally, you should inspect the flooring and remove remaining adhesive or something similar.

C) Adhesive fastening of solid wood flooring boards on subfloors of stone or tiles

Check: Subfloor ready for installation of flooring?



C) Adhesive fastening of solid wood flooring boards on stone floors or tiled floors

Checking the subfloor preparation

1.1 Check: load-bearing-capacity

Load-bearing-capacity:

The subfloor construction must have a sufficient load-bearing-capacity. Any loosened or broken elements must be removed.

1.2 Check: remnants of paints, mortar or plaster, general cleanness

General cleanness:

The subfloor must be cleaned very carefully (brush, vacuum cleaner). Especially, all dust has to be removed.

Remnants of wall paints, mortar or plaster:

Remove remnants from the floor with a paint-scraper, trowel or chisel. Remove all debris and dust (broom, vacuum cleaner).

1.3 Check: surface coatings, polish, oil

Surface coatings, polish, oil/wax:

If the subfloor has been coated or shows remnants of surface treatment, you should contact an expert for advice.

For basic cleaning (degreasing) we recommend BONA S100 thinner/diluent (prior to sanding). Please check the attached Technical datasheet very carefully.

Finally, the stone floor or tiled floor must be sanded thoroughly. Diamond- or double-sided floor sanding discs are particularly well suited for this process.

1.4 Check of levelling accuracy, cracks etc. → if not OK:

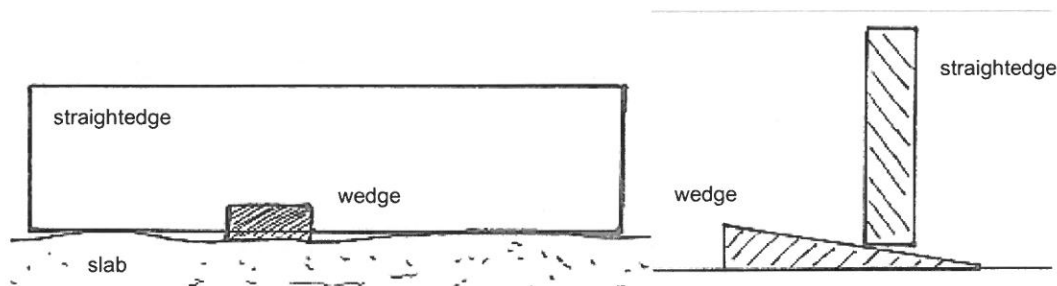


Fig.1. Levelling devices

Uneven patches, as for example holes from broken or removed tiles, can be filled with rapid setting mortar (BONA R610). Then, a primer should be applied, BONA R410 is recommended. Next, sharp quartz sand (grain 0.3 – 0.8 mm) should be broadcasted evenly across the entire floor. After drying, the overflowing sand should be removed thoroughly. Finally, the levelling has to be done (BONA H600 or BONA H610 is recommended). Please follow the instructions of the attached Technical datasheets meticulously.

Laying an adhesive fastened wood flooring

If possible, start with the installation of the flooring from the wall opposite to a doorway. In this way you will avoid stepping on the floor after laying the boards and the adhesive will be curing without further loading or stress.

First, you lay out three rows of the flooring boards without an adhesive applied („dry laying“), boards cut to length and the first row fitting to the profile of the wall. Keep a gap of approx. 10 – 15 mm between the first row and the wall for inserting wedges or spacers. At this point you still may inspect the boards with regard to specific colour variations, typical wooden imperfections or knots; you can use boards with imperfections at the beginning or at the end of a row. Damaged boards have to be sorted out. Mark the area of the first three rows for application of the adhesive, e.g. with a chalk line. Then, remove the boards from the slab and go ahead with the laying procedure:

Take out the adhesive (we recommend BONA R850) of the container with a toothed or notched trowel (e.g. BONA art.no. 1500G) and apply it across the marked area evenly. Follow the instructions of the attached Technical datasheet carefully.

The boards of the first row are now placed into the adhesive layer bed and firmly tapped down.

Use wedges or spacers to keep the gap between the wall and the first row of boards. Then, the next two or three rows can be laid. For straightening slightly bent boards we recommend to use a tension belt (Fig.6).



Fig.2. Tension belt (ratcheting strap)

Proceed laying the next three rows as shown above, and repeat this procedure till you have reached the opposite wall of the room. Check the straightness of the rows regularly. The last row has to be fit to the profile of the wall before applying the adhesive. Note the necessary gap between the last row and the wall. The last row must be installed tightly, using a proper tool, e.g. a pull bar (Fig.7). Finally, the last row should be fixed, using wedges or spacers.



Fig.3. Pull bar

You should avoid unnecessary breaks, as the life of the applied adhesive is limited. Long waiting periods or breaks can cause imperfect bonding to the subfloor.

Make sure that the boards and the slab are joined tightly during the entire curing period of the adhesive. If necessary, use weights to press down the flooring,

Finally, you should inspect the flooring and remove remaining adhesive or something similar.



Bona S100



Bona S100

Bona S 100 is a thinning and cleaning agent for different solved parquet adhesives and other products.

Technical Data

Product Base:	Ethanol
Colour:	transparent
Viscosity:	thin, like water
Density:	0.8 g/cm ³
Storage:	Keep in a cool place. Protect from frost.
Shelf life:	12 months
Pack size:	5 litre canister (4 per carton)

Further data are available in the site work data sheet.



Bona R410

Technical data sheet

Fastening



R410 is a solvent and water free two-component epoxy resin for priming, hardening and sealing substrates, or for damp-proofing concrete floors and substrates up to 5 CM%. It can also be used as a primer before using R770, R777 and R840, R850, R850T or levelling compounds and, after thinning with S100, for hardening of the sub floor. In many cases (see Site work) broadcasting of sand in the last application is necessary.

- Solvent free
- Excellent adhesion to many substrates
- Application possible with a paint roller, brush or trowel



Technical data

Base:	Epoxy resin.
Colour:	Uncoloured.
Viscosity:	Easy to apply.
Density:	1.1g/cm ³ .
Cleaning agent:	S100. After hardening can only be removed by abrasion.
Storage / transport:	The temperature must not fall below +5°C or exceed +25°C during storage and transport. Store in a dry, well ventilated place.
Shelf life:	12 months.
UN:	3082 (component A), 2735 (component B).
Pack size:	5 kg combination package (75 per pallet).

Additional detailed information is noted in the appropriate Safety Data Sheet.

Preparations

The substrate must be even, totally dry, clean, free from cracks and physically sound. The surface should also be slightly textured. If necessary it should be professionally prepared for laying.

Suitable substrates (also in association with underfloor heating) are:

- Cementitious screed (CT) according to EN 13813
- Calcium sulfate screed (CA) according to EN 13813
- Mastic asphalt screed (AS) according to EN 13813
- Wooden substrates
- Chipboard (V100)
- Magnesia floors
- Heated floors

Bona R410

Technical data sheet

Fastening



Application

Before using the primer the following climatic conditions must be met (values for Central Europe):

- Air temperature: min. 18°C
- Floor temperature: min. 15°C (with underfloor heating max. 20°C)
- R.H: max. 70%

The primer itself must, if necessary, be brought to the right temperature

- when warm it reacts more quickly,
- when cold it reacts more slowly.

The resin and hardener components are supplied in the correct proportions. Add component B (in the cover unit) completely to component A (bucket) and mix thoroughly, e.g using a drilling machine with a stirrer. The pot life of the mixed primer is approx. 20 minutes and it is therefore important to ensure that it can be used within this time. Apply the primer to the substrate using a roller, brush or trowel.

N.B. The tools to be used must be clean. Contamination from any residues may affect the properties of R410.

If used as a primer, apply one layer and broadcast sand into the drying film. If R770, R777 or R840, R850, R850T are to be used for gluing afterwards, the use of sand is not necessary.

For in-depth (approx. 1-2 mm) priming add approx. 20% S100, mix thoroughly and apply. If necessary, follow with an application of the non thinned mixture (without S100) and broadcast sand into the drying film.

With S100 added the pot life is 40 minutes.

When used for damp-proofing (only on concrete and cement/sand screeds) the primer has to be generously applied twice and in alternate directions. Wait until the primer has started to react (2 to 3 hours) before applying the second coat. After applying the second layer, broadcast sand- 2 kg/m² dry quartz sand (grain size 0.3-0.8 mm).

Brush off the excess sand, rub with a stone for loosening unattached sand and remove excess sand with a vacuum cleaner.

Drying time: Approx. 24 hours

Please also refer to the instructions for use provided by the parquet manufacturer.

Coverage

Primer / Surface hardener: - Approx. 150-250 g/m²
Moisture Barrier: - Approx. 500 g/m²

Bona takes only responsibility for the delivered product, no responsibility can be taken for the total installed product. If in doubt, conduct a test or a trial. Observe also other Bona product datasheets.

Bona D501

Technical data sheet

Bona D501 is a one-component primer for the preparation of substrates prior to the use of silan based Bona adhesives, in particular Bona R844, R845, R850/850T, R860 and R870. It is suitable for absorbent and non-absorbent substrates (with the exception of magnesium industrial floors) and for chipboard, panels and similar substrates.

- Solvent free
- Vapour permeable
- Dust binding

Technical data

Product type:	Synthetic dispersion
Colour:	White
Viscosity:	Easy to apply
GISCODE:	D1
EMICODE:	EC1 Plus
Density:	Appr. 1.0 g/cm ³
Cleaning agent:	Water
Storage / transport:	The temperature must not fall below +5°C or exceed +25°C during storage and transport. Store in a dry, well ventilated place.
Shelf life:	6 months
Pack size:	5 litre canisters (3 per carton)

Additional detailed information is noted in the appropriate Safety Data Sheet.

Preparations

The substrate must be even, totally dry, clean, free from cracks and physically sound. The surface should also be slightly textured. If necessary it should be professionally prepared for laying.

Suitable substrates (also in association with underfloor heating) are:

- Cementitious screed (CT) according to EN 13813
- Calcium sulfate screed (CA) according to EN 13813
- Wooden substrates
- Chipboard V100

Application

Before using the primer the following climatic conditions must be met (values for Central Europe):

- Air temperature: min. 18°C
- Floor temperature: min. 15°C (with under floor heating max. 20°C)
- R.H: max 70%

Apply the primer evenly to the substrate using a brush or roller -avoid the formation of pools- and allow drying to a film. After the substrate is dry (see below) the parquet can be glued down.

Fastening



Bona D501

Technical data sheet

Fastening



Coverage

approx. 100-150 g/m²

Drying time: approx. 1 to 2 hours depending on the absorbency of the substrate and the room climate.

Please also refer to the instructions for use provided by the parquet manufacturer.

Bona takes only responsibility for the delivered product, no responsibility can be taken for the total installed product. If in doubt, conduct a test or a trial. Observe also other Bona product datasheets.

Bona D510

Technical data sheet

Fastening



D510 is a one-component primer for the preparation of substrates prior to the use of levelling compounds, in particular Bona H600, H610 or H620. It is suitable for absorbent or non absorbent substrates (with the exception of magnesium industrial floors) and for chipboard, panels and similar substrates.

- Certified as "very low emission" EC 1
- Solvent free
- Good adhesion to many substrates



Technical data

Product type:	Synthetic dispersion
Colour:	White
Viscosity:	Easy to apply
Density:	1.0 g/cm ³
GISCODE:	D1
Eimicode:	EC 1
Cleaning agent:	Water
Storage / transport:	The temperature must not fall below +5°C or exceed +25°C during storage and transport. Store in a dry, well ventilated place.
Shelf life:	12 months
Pack size:	5 litre canisters (3 per carton)

Additional detailed information is noted in the appropriate Safety Data Sheet.

Preparations

The substrate must be even, totally dry, clean, free from cracks and physically sound. The surface should also be slightly textured. If necessary it should be professionally prepared for laying.

Suitable substrates (also in association with underfloor heating) are:

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- Calcium sulfate screed (CA) according to EN 13813
- Mastic asphalt screed (AS) according to EN 13813
- Wooden substrates
- Chipboard (V100)

Bona D510

Technical data sheet

Fastening



Application

Before using the primer the following climatic conditions must be met (values for Central Europe):

Air temperature: min. 18°C

Floor temperature: min. 15°C (with underfloor heating max. 20°C)

R.H: max 70%

Apply the primer evenly to the substrate using a brush or roller. N.B. Avoid the formation of pools. Allow to dry to a transparent film.

Coverage

Coverage: Approx. 150 g/m²

Drying time: Approx. 1 to 24 hours depending on the absorbency of the substrate and the room climate. In cases of doubt, e.g. with moisture sensitive substrates such as anhydrite (flowing) floors and before laying highly absorbent parquet types, allow at least 24 hours; chipboard: 48 hours.

Other details of the product are described in the product description data sheet.

Please also refer to the instructions for use provided by the parquet manufacturer.

Bona takes only responsibility for the delivered product, no responsibility can be taken for the total installed product. If in doubt, conduct a test or a trial. Observe also other Bona product datasheets.

Bona R580

Technical data sheet

Bona R580 is water and solvent free silane based compound for priming and/or sealing the residual moisture in the substrate (up to 5%CM. / 98%RH.) before installing a wooden floor.

Optimal as part of a system in conjunction with Bona R850, R850T. Also compatible with other Bona Silane based wooden floor adhesives like Bona R845 or Bona R860.

Note: Bona R860 and R845 have a higher water permeability.

Suitable to apply before using Bona levelling compounds

Note: Although Bona silane-based adhesives can be applied directly onto R580, before applying levelling compounds a broadcasting of sand in the wet R580 **must** be made to ensure successful bonding.

- One-Component
- Single coat application
- Fast setting
- Trowel easy application
- Can be used as a two component system to gain even shorter setting time, by adding and mixing 1% water (weight)
- Not hazardous, safe handling and transport without constraints

Note: Where subfloors require levelling as well as a moisture barrier, Bona recommends that the moisture barrier is installed **first** and then levelling compound applied. This is to ensure compatibility; not all levelling compounds are suitable for use beneath a moisture barrier/DMP & some may contain additives which may reduce the adhesion of the R580 to the surface e.g SBR. Where there is doubt perform an adhesion test.

Technical data

Base:	Silane-based moisture barrier/primer
Colour:	White
Viscosity:	Easy to apply-stable
Density:	1.25g/cm ³
Drying time, until: (1-component)	- Application of Bona silane-based adhesive: approx 6 hours* -Application of levelling compound:8-12 hours* (Note: sand must be broadcasted into wet R580)
Application tools:	Fine-toothed trowel (A3)
Application rate:	See Treatment Schedule, below
Cleaning agents:	S100, acetone and ethanol, white spirit
Safety	According to EU law the product is non-hazardous
Shelf life:	6 months
Storage/transport:	The temperature must not fall below +5°C or exceed +25°C during storage or transportation. Store in cool, dry, well ventilated area.
Disposal:	Wastes and emptied containers should be handled in accordance with local regulations.
Pack size:	7kg bucket (60 per pallet) 6kg bucket (60 per pallet)

Note: The 6kg bucket includes a sachet of water for mixing into R580 if used as a 2 component system (accelerated drying).

Bona takes only responsibility for the delivered product, no responsibility can be taken for the total installed product.

If in doubt, conduct a test or a trial

Fastening



Bona[®]

Bona R580

Technical data sheet

Fastening



*under normal climatic conditions, 20 °C/60% R.H.

Preparation

The substrate must be even, clean, free from cracks and physically sound. Prior to application the floors must always be sanded, any laitance on top of the floor must have been removed. With concrete subfloors shot blasting may be necessary. The surface should not appear "obviously wet". If necessary it should be professionally prepared for laying.

Note: R580 cannot be used onto a subfloor where bitumen is present. The subfloor should be mechanically prepared to ensure **all** traces are removed prior to application.

If the floor is uneven and levelling with a levelling compound (e.g.H650) is needed, the R580 should be applied **first** at a coverage rate of approximately 500 g/m². Afterwards quartz sand (grain size: 0.3 to 0.8 mm) should be broadcasted in excess (~ 2 kg /m²) into the fresh, wet primer.

After hardening, surplus sand shall be removed by buffing, sweeping and vacuum cleaning, then the levelling compound can be applied.

Suitable substrates (also in association with underfloor heating) are:

Cementitious screed (CT) according to EN 13813

Concrete floors

Calcium sulphate screed (CA) according to EN 13813 (**only as a primer, not as a moisture barrier!**).

Note: Not all levelling compounds are suitable for use beneath a moisture barrier/DPM, if in doubt consult the manufacturer.

Application

Before using the primer the following climatic conditions must be met(values for Central Europe):

Air temperature: min. 18°C

Floor temperature: min. 15°C (with underfloor heating max. 20°C)

R.H: max. 70%

The product is protected by a foil, which must be removed together with any small amounts of hardened material prior to use. With the 6kg container, the little bag on top of the foil contains water, which can be added to the product if used as a 2-component system.

Use as a 1 Component System:

The primer should be applied evenly using a notched trowel (TKB A3) or a flat trowel. To act as a damp proof membrane the consumption must be between 500 & 1000 g/m². After approximately 6 hours setting time (the surface might still be sticky!), the parquet can be laid **providing** a Bona silane-based adhesive is used e.g.R850).

Use as a 2-Component System:

Add , while stirring , to the primer the total or parts of the content of the sachet found on top of the foil (only for the 6 kg 2-C package!).

Larger amounts of water lead to an acceleration of the bonding process, lower amounts make the bonding process slower (for more detail see the table below). After mixing cross-linking starts, the material has to be applied to the substrate inside the pot-life time of **20 mins.** and has to be spread. If sand is to be broadcasted, it should be done in the following 20 min.

Bona R580

Technical data sheet

After 4 hours the material has set, the Bona silane-based adhesive can be spread on top and parquet can be laid.

Water in %	Water in g/(6 kg)	Pot-life time / min
0.5	30	40
1.0	60 (content of the bag)	20
1.5	90	2

Bona takes only responsibility for the delivered product, no responsibility can be taken for the total installed product. If in doubt, conduct a test or a trial.

Fastening



Bona[®]

Bona H600

Technical data sheet

H600 is a cementitious, self-smoothing, rapid hardening levelling compound especially for the application under mosaic parquet, lamparquet, multi-layer parquet and solid parquet.

Only for interior use.

Special Properties are:

- Self levelling
- Self smoothing
- High strength and hardness
- Low shrinkage
- Low tension
- Could be covered after 24 hours
- Applicable in a thickness from 1,5 to 10 mm, for bigger thickness the material could be spun out
- Cement-based
- Levelling compound
- Smoothing compound
- Self-smoothing
- Polishable
- High filling properties
- Pumpable
- Crack-free
- Makes surfaces ready to receive floor coverings in one single operation

Technical data

Base:	Cement
Color:	Grey
Consumption:	1.5 kg per m ² and mm
Pot life:	30 min
First load (walking):	after approx. 3 hours
Covering: (10-20mm)	after approx. 24 hours (1,5-10mm) after approx. 48 hours
GISCODE:	ZP1
Ecode:	EC1R
Cleaning agent:	Water (only for fresh product!)
Storage:	not below +5 °C during Winter, below +30 °C in Summer
Shelf life:	12 months
Pack Size:	25 kg paper sacks (40 per pallet)

Additional detailed information is noted in the appropriate Safety Data Sheet.

Preparations

The substrate must be even, totally dry, clean, free from cracks, physically sound and have a slightly textured surface. If necessary it should be professionally prepared for laying. Substrates should be treated with D510, D530 (not for Calcium sulphate screed) or R410 (broadcast sand, always necessary!) as a primer. Unevenness, holes etc. have to be filled with H610 or with spun out (see below) material.

Suitable substrates are (even with underfloor heating):

- Cementitious screed (CT) according to EN 13813
- Calcium sulfate screed (CA) according to EN 13813
- Mastic asphalt screed (AS) according to EN 13813 not thicker than 5 mm

Fastening



Bona H600

Technical data sheet

Fastening



Application

Working temperature: above +5°C

Pour cold, clean water into a clean bucket. Then add gradually the powder while mixing slowly. Mix to a homogenous, lump-free consistency. The mixture should be a uniform colour showing no evidence of polymer segregation. Spread the material during the pot life time (30 min) on the floor surface. Use a flat-edged hand trowel, a steel straight edge or similar tools. After application in a thickness higher than 5 mm the removal of en-trapped air with a pin-roll is recommended. Wash tools and hands with water while material is still uncured.

For thicknesses above 10 mm the levelling compound must be spun out with dry sand (see below). This extra material must be added to the water / powder mixture as the last component.

Mixing ratios:

Normal levelling compound (thickness 1,5 to max. 10 mm):

ca. 5,75 l Water

25.0 kg levelling compound powder

Spin out levelling compound (thickness 10 to max. 20 mm):

ca. 5,75 l Water

25.0 kg levelling compound powder

16.0 kg (= 65 weight-%, a 10 l bucket) Sand (grain 0 to 3 mm)

If a second layer of levelling compound should be applied, the best time is after setting, approx. 3 hours after the first application. If the first layer is dry, use primer D510.

Take care that curing layers are protected from heat (e.g. high room temperatures, intensive sun light) and draught.

Subsequent treatment / Sanding

For an optimal adhesion of the adhesive to the levelling compound it is recommended to sand the levelling compound slightly approx. 4 hours after installation.

Note! The tools must be clean.

Consumption

Consumption: 1.5 kg/(m² mm)

Pot life: 30 min

First load (walking): after approx. 3 hours

Covering: layers up to 10mm after approx. 24 hours, for thicker layers the drying time is 48 hours

Please also refer to the instructions for use provided by the parquet manufacturer.

Bona takes only responsibility for the delivered product, no responsibility can be taken for the total installed product. If in doubt, conduct a test or a trial. Observe also other Bona product datasheets.

Bona H610

Technical data sheet

Bona H610 is a rapid setting and drying, slump free mortar for internal repairs. Ideal for filling holes and cracks in screeds, repairing and refacing internal concrete stair treads and risers, cement and sand screeds, concrete floors or making good around pipe work, door and window frames.

Special Properties are:

- Rapid hardening and drying – could be covered after 60 minutes.
- Slump free - ideal for vertical and horizontal repairs
- High strength and hardness
- Stress relieved – low shrinkage

Technical data

Base:	Cement, art. Resins
Color:	Grey
Consumption:	1.6 kg/(m ² mm)
Pot life:	15 min
First load (walking):	after approx. 1 hour
Covering:	after approx. 1 hour
GISCODE:	ZP1, Chrom (VI) reduced < 2 ppm
EMICODE:	EC1R
Cleaning agent:	Water (only for fresh product!)
Storage:	not below 5 °C during Winter, below 30 °C in Summer
Shelf life:	12 months
Pack Size:	25 kg paper sacks (40 per pallet)

Additional detailed information is noted in the appropriate Safety Data Sheet.

Preparations

The substrate must be even, totally dry, clean, free from cracks, physically sound and have a slightly textured surface. If necessary it should be professionally prepared for laying. Substrates should be treated with D510, D530 or R410 (broadcast sand, always necessary!) as a primer; AVOID puddles. By levelling out larger areas over the thickness of 5 mm, Bona H610 must be bulked out with 1 / 3 volume of sharp sand (0 – 4 mm grading)

Suitable substrates are (even with underfloor heating):

- Concrete
- Cementitious screed (CT) according to EN 13813
- Calcium sulfate screed (CA) according to EN 13813
- Other dry and sound sub-floors
- Mastic asphalt screed (AS) according to EN 13813 at max. 5 mm thickness.

Fastening



Bona H610

Technical data sheet

Fastening



Application

Apply at temperatures above + 5°C.

Pour cold, clean water into a clean bucket. Then add gradually the powder while mixing slowly. Mix to a homogenous, lump-free consistency. The mixture should be a uniform colour showing no evidence of polymer segregation. Spread or fill the material during the pot life time (15 min) on the substrate. Use a flat-edged hand trowel, a steel straight edge or similar tools. Wash tools and hands with water while material is still fresh.

Mixing ratios:

Use as levelling compound for larger (thickness 1,5 to max. 5 mm):

5.5 l Water

25.0 kg powder

Bulk out levelling compound (thickness up to max. 20 mm):

5,5 l Water

25.0 kg levelling compound powder

app. 8 kg Sharp sand (grain 0 to 4 mm)

Take care that curing layers are protected from heat (e.g. high room temperatures, intensive sun light) and draft.

Subsequent treatment / Sanding

For an optimal adhesion of the adhesive to the levelling compound it could be useful to sand the level-ling compound slightly approx. 4 hours after installation.

Note! The tools must be clean.

Consumption

Consumption: 1.6 kg/(m² mm)

Pot life: 15 min

First load (walking): after approx. 1/2 hours

Covering: after approx. 1hour

Please also refer to the instructions for use provided by the parquet manufacturer.

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Bona R850

Technical data sheet

R850 is an elastic 1-component silane adhesive for wooden floors. The hardened adhesive is similar to conventional adhesives in its ability to withstand thrust during expansion, whilst having a low resistance to shrinkage. This means that tension to the subfloor is very low. The use of a primer is generally not necessary. The adhesive hardens due to a chemical reaction with moisture.

- Single component; easy to use.
- Soft elastic properties
- Water and solvent free
- Good adhesion to most substrates and timber materials
- Splashed adhesive can be easily removed from pre-finished surfaces and hands
- Firm texture; retains trowel 'rib structure'

Technical data

Base:	Silane modified prepolymer
Colour:	Cream
Viscosity:	Easy to apply-stable
Density:	1.4g/cm ³
Open time:	Approx 40 mins*
Drying time, until:	- Application of load: 24-48 hours*
Application tools:	Notched trowel
Application rate:	See Treatment Schedule, below
Safety	Detailed information is contained within the Safety Data Sheet
Shelf life:	12 months
Storage/transport:	The temperature must not fall below +5°C or exceed +25°C during storage or transportation. Store in cool, dry, well ventilated area.
Disposal:	Wastes and emptied containers should be handled in accordance with local regulations.
Pack size:	7kg and 14kg buckets

Bona takes only responsibility for the delivered product, no responsibility can be taken for the total installed product.

If in doubt, conduct a test or a trial

**under normal climatic conditions, 20 °C/60% R.H.*

Preparation

The substrate must be prepared in accordance with BS 8201: 2011 i.e. even, totally dry, clean, free from cracks and physically sound. The surface should also be slightly textured. If applicable, it must meet the requirements of local standards or codes of practice. If necessary it should be professionally prepared for laying. A primer is typically not needed, if the sub floor is problematic (e.g. weak surface, missing damp proof membrane) use R410. A broadcasting of sand into R410 can be omitted, if the surface of R410 stays clean and the parquet is glued with R850 within 24 h. Uneven floors should be levelled with H650 or repair mortar (localised damage etc). Suitable substrates (also in association with underfloor heating) are:

Cementitious screed (CT) according to EN 13813
Floors levelled with levelling compounds (at least 2 mm thick), resistant against plasticizer migration

Fastening



Bona R850

Technical data sheet

Calcium sulphate screed (CA) according to EN 13813
Chipboard (V100)
Other dry and sound sub-floors

Note: Mastic asphalt screed (AS) according to EN 13813 and other sub floors which are affected by migration of plasticizers must get a protective layer of R410 or R540.

In scenarios where bitumen is present from previous floor installations; as much as possible should be removed. Traces can be suppressed using Bona R410.

Treatment schedule

Depending on the expected average conditions the parquet needs, for the best adhesion, the correct moisture content of the wood to be selected. Solid wood parquet should be slightly more humid whilst multi-layered or prefinished parquet should be slightly drier. eg. in Central Europe average room conditions of 20°C and 50% relative air humidity can be expected. Solid wood parquet shall have therefore, in general, an average humidity of 9% whereas multi-layered and prefinished parquet shall have in average 8%. Typical deviations from the average are +/- 2 %. Where doubts exist, avoid too dry material.

Note: Please also refer to the instructions for use provided by the parquet manufacturer.

Trowel: Bona 850 F or Bona 850 G

Usage approximately 850 g/m² • Mosaic parquet and similar 1 layered prefinished parquet

Trowel: Bona 1000 F or Bona 1000 G

Usage: approximately 1000 g/m² • 2 layered prefinished parquet

Trowel: Bona 1250 F or Bona 1250 G

Usage: approximately 1250 g/m² • 22 mm strip flooring • 3 layered prefinished parquet, boards

Trowel: Bona 1500 F or Bona 1500 G

Usage: approximately 1500 g/m² • massive boards (with tongue and groove)

Use a fine trowel for small pieces of wood and/or smooth substrates, and a coarse trowel for large pieces of wood and/or less smooth and rough surfaces.

(F = fine, G = coarse)

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Application

Before using the adhesive the following climatic conditions must be met (values for Central Europe):

Air temperature: min. 18°C

Floor temperature: min. 15°C (with underfloor heating max. 20 °C)

R.H: max. 70 %

The adhesive itself must, if necessary, be brought to the right temperature. After opening the bucket remove the protective foil and hardened adhesive at the edges.

The adhesive should be applied evenly using a notched trowel appropriate to the flooring being laid (see above). The parquet should be laid on the adhesive and pressed down firmly during the open time, approx. 40 minutes.

Fastening



Bona R850

Technical data sheet

If on the sub floor-applied adhesive has a skin, remove adhesive and apply new. If some adhesive is pressed up in joints (so that it might come into direct contact with the finish) it must be carefully removed (danger of migration of plasticizers in the finish film).

After 24 to 48 hours it is possible to apply load or stress to the floor.
Sanding and the application of a surface coating may be carried out after 2 to 4 days depending on the type of parquet, absorbency of the substrate and ambient conditions on site.

Fastening



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