

## Guidance when Installing SPC Rigid Core Click Flooring

In this guide, we hope to share with you the most common issues our customers face while installing SPC rigid core click vinyl flooring, and how these can be avoided for a stress-free installation. With our experience, knowledge and understanding of this flooring, we hope that this guide will be helpful to anyone having trouble installing SPC rigid core – professional floor layers and DIYers alike.

Following this guide should remove any confusion surrounding the installation process and will ensure that your flooring, with proper care, will last for years to come. Knowing what could potentially go wrong if the manufacturer's guidelines are not followed is important, as you may not spot the signs until the flooring has already begun to fail.

### What is SPC Rigid Core?

Firstly, let's explain what SPC rigid core click vinyl flooring is: **SPC** stands for **Stone Polymer Composite**, which means that its rigid core is a blend of both stone powder and plastics. This is a relatively new flooring product, and **it shouldn't be assumed that this is the same as other more recognised click floorings, such as laminate.**

The benefits of this flooring are as follows: the plastic element enables it to be moulded into an intricate click mechanism, allowing for easy installation; at the same time, the stone element provides extra stability and strength when compared to a 100% vinyl click flooring. SPC rigid core is also perfect for most areas of the home as it has an authentic look, with designs to replicate both stone and wood finishes; it's waterproof for use in areas such as the kitchen and bathroom and is quieter and softer underfoot compared to many other floors.

One important factor of SPC flooring to consider is that, **as this is a rigid core product, it is not designed to flex** (like natural stone floors like ceramic or porcelain). As it contains a high percentage of stone in its core, **too much flex or bend will lead to cracking, snapping, or breaking.** This is the most common issue caused by improper installation, which we will explain in more detail below.

### Common Issues

The most common issues that arise with SPC flooring can be attributed to improper installation due to a lack of knowledge of the product. These problems can be divided into six categories, and we will go into greater detail regarding each point below.

#### 1. Surface Levels

As stated in the installation instructions, **the subfloor must be level within 2mm over a 1 metre distance.** This isn't a large tolerance, and you may find that subfloors which appear level at a glance (such as poured concrete, older floorboards or asphalt) do not meet this requirement.

Upon investigation, we find that this is often a contributing factor when SPC flooring fails. Just like a glue down LVT, SPC flooring requires proper subfloor preparation. **Even a solid/new concrete subfloor which appears level should be inspected to ensure that it is level prior to installation of the flooring, and a self-levelling compound may be required in this case to ensure that the subfloor meets the manufacturer's requirements.** When applied correctly, this will smooth out any undulations or low spots in the subfloor.

If you are unsure as to whether your subfloor is level and smooth enough to install your SPC rigid core flooring, you can confirm this by placing a spirit level at various points to check. As you can see in the image to the right, the distance between the floor and the spirit level is greater than 2mm over its 1 metre length; this indicates that the floor requires levelling to a higher standard before installation.



If you are employing a professional installer or builder to level your floor, **you will need to ask for this to be finished to an SR1 standard.**

- *What will happen if my subfloor is not at this level?*

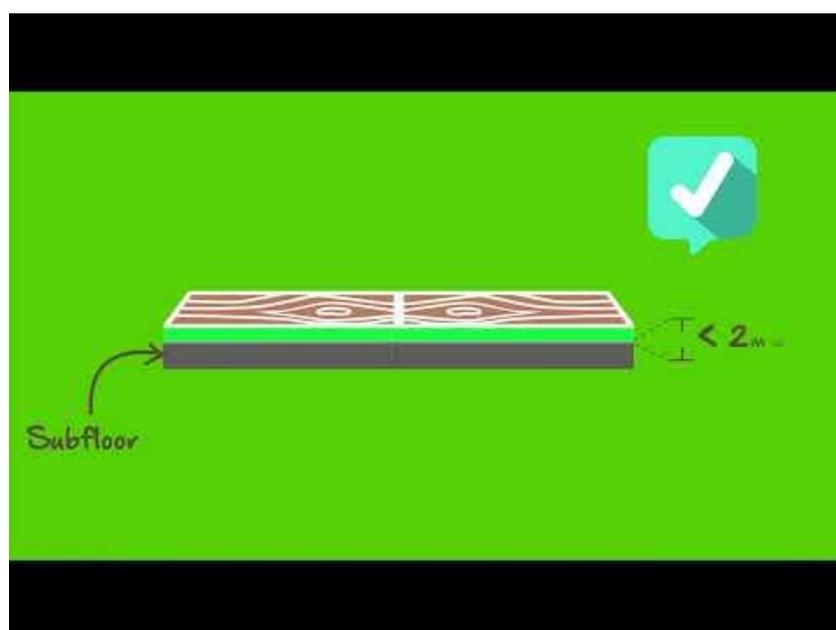
If the level of your subfloor varies by more than 2mm over a 1 metre distance, you will find your SPC rigid core flooring has a slight bounce or flexes underfoot in some areas. Over time, with regular foot traffic, this movement has the potential to damage the click system and central areas of the floor.

As we explained earlier, **due to the high percentage of stone present in SPC flooring, the intricate click system and 4-6mm core will break when too much weight is added over an uneven surface.**

- *What should I do if my subfloor isn't within tolerance for the level required?*

You will need to use structural materials in your subfloor preparation, such as a smoothing compound (sometimes referred to as a latex, screed or self-leveller), **although it's important to ensure that this is applied correctly.** Plyboard or structural boards can be laid over top of an existing timber floor – in some cases, both may be required to achieve the desired standard.

**Do not use additional underlay to level the subfloor.** Preparation is vital for SPC rigid core flooring to perform as intended. Our short video below may clarify why a level subfloor is required.



## 2. Expansion Gaps

As SPC rigid core click vinyl is a floating floor system, changes in temperature and humidity can cause the flooring to expand and contract. Therefore, **you need to ensure that there are adequate expansion gaps left at the perimeter of the floor – this includes around fixed units, walls, appliances, architraves, etc.**

- *What size of expansion gap do I need to leave with SPC flooring?*

The simple answer is: **as much as is possible**. Like with other click floorings, 10mm is more than adequate in any situation. If the expansion gap will be hidden by skirting boards, profiling or scotia beading, these items generally have a depth greater than 10mm, so the gap will not be visible.

Technically, for most SPC floorings, an expansion gap of around 0.08% of the length or width of the area will suffice. For example, a 4-metre run of flooring will require a 3.2mm expansion gap at minimum. **Please note, however, that this is based on perfect conditions** – if you have large windows or bifold/patio doors which let in lots of light, the product may expand by more than 0.08% on warmer days. As such, leaving a wider expansion gap allows for additional expansion during periods of hot weather.

- *What will happen if I don't allow an adequate expansion gap with SPC flooring?*

If the expansion gap is not sufficient, you'll find that the SPC flooring will push back from the edges and begin to lift itself up in some areas. The example image on the right shows what can potentially happen if the flooring gets too warm without adequate expansion gaps. With foot traffic, this lifting causes unwanted movement which (as with an uneven subfloor) will damage the click system and cause the flooring to fail.



Below are two examples of poor expansion gaps. In the image on the left, you can see that the expansion gap has been filled with silicone or filler – **this is the same as leaving no expansion gap, as the filler will prevent the floor from expanding with changes in temperature.**



Best practice here would be to undercut the architraves and slide the flooring underneath, allowing the expansion gap to be hidden and maintaining a neat finish – **not** to fill gaps with silicone.



Even cuts around kitchen units require adequate expansion gaps as the floor can expand in multiple directions when the temperature changes.

This example shows a poor expansion gap.

### 3. Breaks in doorways and over long distances

When installing SPC flooring, in some instances, you or your customer may prefer for the flooring to run continuously through the property, from the hallway to the kitchen and into the lounge, etc. However, this can lead to some issues over time. Varying temperatures throughout the rooms will cause the product to expand and contract at different stages and rates – flooring in areas with a higher ambient temperature will expand more quickly than those with a lower ambient temperature. This can lead to damage and raised areas as explained in point 2 above.

Therefore, **it is beneficial to add breaks in doorways where possible**. This not only looks natural, but also separates different areas of flooring to minimise the potential for damage caused by the flooring trying to expand in different directions.

This is not to say that SPC rigid core flooring cannot be laid over larger areas. If conditions are right – stable temperatures, good expansion gaps and not much heavy furniture in place – then the SPC flooring shouldn't experience any issues. **However, we recommend that these factors are considered before laying an SPC flooring over long areas or through doorways.**

If you are concerned that this may be an issue with your installation but would still like for the floor to flow interrupted over a larger area, we would recommend opting for a glue down LVT flooring, as these can run continuously over any length and in any direction without expansion gaps or breaks.

### 4. Exposure to excessive sun/heat

Some common issues that we come across with SPC flooring (and vinyl flooring in general) are due to high temperatures, largely from sun exposure. While temperatures in the UK are generally moderate, the weather can be sporadic and it's not uncommon to experience hot weather followed by cool weather over the course of 24-48 hours. **This can be worse for SPC floorings as the changes in temperature can cause the tiles/planks to expand and contract at a much faster rate.**

Although most SPC rigid core floorings can withstand temperatures of 40°C and above, they can only perform well at these temperatures when the temperature is controlled (for example, increased by 1°C per day for 40 days, and then reduced in the same way). In a typical UK home, during colder months, the temperature can be controlled using central heating systems; **however, when we experience warmer weather, exposure of the SPC to these temperatures (exceeding 27-28°C) can cause the flooring to expand at a rate beyond its capability.**

Allowing a large expansion joint will assist with the flooring's performance, but we would advise that any areas subjected to direct sunlight and heat are kept in shade by blinds or curtains; alternatively, rugs or mats can be laid over top to prevent the flooring surface exceeding its maximum temperature of 27-28°C.

- *What happens if my SPC flooring exceeds 27-28°C?*

As in the image below, if the flooring gets too hot, then you may experience lifting in some areas. This is caused by excessive force due to fast expansion of the planks/tiles. Most often, if this area is not subject to foot traffic at the time, the flooring will settle down once temperatures begin to drop. However, often, foot traffic over affected areas can compromise the click system; this may result in the lips of the planks/tiles breaking off, as in the image below.



When exposed to excessive heat, SPC flooring can raise up in sections, which when subject to foot traffic can damage the click system.



In an SPC floor, movement from above can cause the weakest point – the click system – to break as it is placed under additional pressure as in the image above.

## 5. Using additional underlay

Most SPC floorings come with a built-in underlay. **If the SPC floor you have purchased comes with a pre-attached underlay, do not add any extra underlay underneath.** If it does not come with an underlay attached, ensure that you check the manufacturer's guide for their best advice.

- *Why can I not use extra underlay with SPC floorings?*

SPC floors typically have a core thickness of 3-6mm. The pre-attached underlay will usually be 1-1.5m thick and composed of iXPE or EVA foam – this allows for the maximum compression that the core of the SPC floor can withstand under normal foot traffic. **Adding any additional underlay can cause too much compression, leading to a “bounce” when walked on.** Over time, this flexing of the floor can result in the floor breaking and looking worn and old in only a short period of time.

The examples below show the result of SPC flooring installed over additional underlay.



This floor had a lot of movement underfoot when walked over, which was caused by an uneven subfloor and use of additional (laminated) underlay. After a period of just 5 months, the floor had broken on many joints due to stress on the joints of the click system.



This close-up shows the damage caused to this flooring over time due to unwanted movement underfoot. When first laid in this manner, the flooring will look perfect, but the movement breaks down the joints of the click system which will eventually begin to separate like this. Remember that **SPC flooring has a rigid core and should not move underfoot.**

If your flooring requires separate underlay, it should also be noted that SPC flooring is not laminate or wood flooring, so it is important that an underlay designed specifically for SPC flooring is used. **Underlays for wood or laminate flooring are not suitable and should never be used in conjunction with an SPC floor.**

One common misconception when purchasing SPC flooring is that additional underlay will provide extra warmth to their floor. **This is not true – as explained above, it causes more harm than good.** Combined with its built-in underlay, when installed correctly, SPC flooring is naturally warmer underfoot than ceramic, stone, laminate, and other varieties of hard flooring.

## 6. Installing Planks and Tiles

Once you've taken this information into consideration and prepared the subfloor in accordance with the points listed above, the next step is in understanding how SPC rigid core flooring fits together. There are a range of click systems available, and **although you may have previous experience with installing click flooring, it's important to take the time to research the SPC flooring you have chosen** to ensure you are aware of the click system used and how the planks or tiles will connect with one another.

As we explained earlier, SPC rigid core flooring usually has a core thickness of between 3-6mm and is made predominantly of stone powder. Therefore, it's important that the installation, transportation, and general handling of the product is done with care, as it can be very easy to break the intricate elements of the click system during these stages.

It's best to approach the installation with extra care, as it doesn't take much force to click the tiles or planks into place – in fact, light handedness is beneficial in this scenario as **soft, gentle tapping with the correct tools will always yield better results than hitting the flooring or forcing the joints together.**

### Summary of Guidance on Installing SPC Flooring

- **Make sure your subfloor is SR1 level or better** – this should be completely smooth, clean and dry prior to installation. With most solid subfloors, you will need to apply a finishing smoothing compound (a layer of 3-6mm should suffice) to ensure that the subfloor is correctly prepared.
- **Do not use additional underlay if the product has an underlay pre-attached.** If the product does not come with a pre-attached underlay, refer to the manufacturer's guidelines and use the underlay recommended.
- **Examine the space where you are planning to install your SPC flooring to determine any areas which will potentially be exposed to sunlight and higher temperatures.** At certain times of the year, these may pose a problem if not addressed during installation. Remember to take the proper steps to protect flooring in these areas and ensure that the surface temperature does not exceed 27-28°C.
- **Allow as much of an expansion gap as possible.** Up to 10mm is suitable and this can be disguised by skirting boards, beading or other profiling – this includes any fixed unit, appliances, etc., and not just walls at the perimeter of the flooring.

- **Allow for expansion joints in doorways**, especially if the property is likely to face varying temperatures across different room; for example, if there is a sunroom leading into a cooler room, or if the flooring is laid over a large area with walls that create turns or changes in direction.
- **SPC flooring must be handled with care in transit, handling, and installation.** The intricate click system is very delicate and brittle prior to installation, but once installed correctly, the flooring will be very strong as pressure will be distributed across the wider area. As such, it's important to take care when connecting the tiles or planks together.

## Final Thoughts

SPC flooring is a great option for many people – however, SPC rigid core is a category in and of itself and is not the same as LVT, laminate or traditional vinyl click flooring, and it's vital to understand what is required for a successful installation.

Even if you have 30 years of experience with installing floors or are a keen DIYer, SPC flooring is a relatively new product so you will need to take the time to learn about it and its capabilities. In this guide, we have shared the main issues we experience with customers installing SPC flooring and how these can occur. **We advise that you consider the space, subfloor, usage, and surroundings before choosing to lay any flooring.**

Although we firmly believe that SPC flooring is an excellent product for both domestic and commercial applications with its many benefits, it does have limitations. **If you're not sure if SPC flooring would be suitable for your space, please seek a professional opinion.** It's important to choose a flooring that not only looks good, but also caters for your needs. Flooring professionals will have experience with various products so as well as online information, please speak to a professional layer or fitter and get their opinion.

Lastly, as they say: **fail to prepare, prepare to fail.** Investing in additional preparation to make sure that your floor is as flat and smooth as possible will be worthwhile in the long run, as it will ensure the longevity and durability of your flooring.