CLEVER CHOICE
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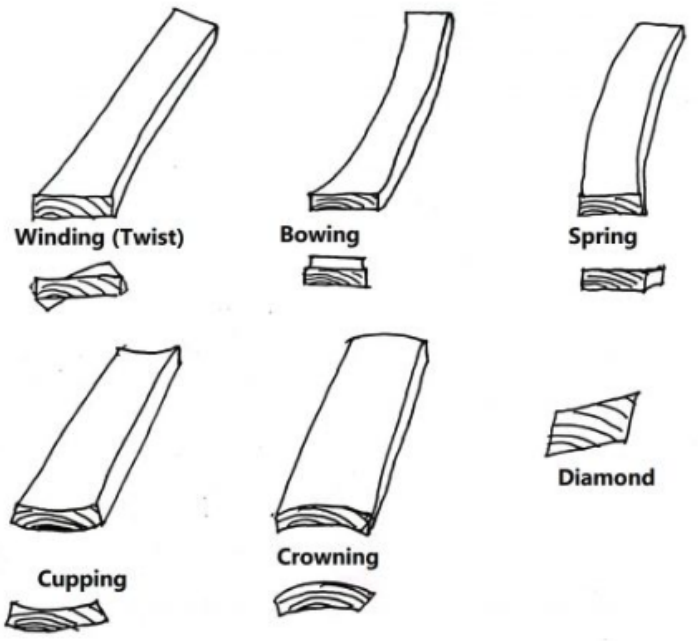
Fashion in flooring

Product Guidelines

What is the Bowing Tolerance of Solid and Engineered Wood Flooring?

Bowing of a wood floor is when the centre of the board is higher than the edges of the board. The opposite of bowing is cupping and this is when the edges of the board are higher than the centre of the board. According to the different directions it warps, bowing can be divided into a convex bow and a concave bow. These are caused by a moisture imbalance distribution between the top layer and bottom layer within the planks, forcing certain areas to expand and swell.



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In European Standard EN 13647:2021 Wood flooring and wood panelling and cladding – Determination of geometrical characteristics, it introduces the measuring method for bow in detail.

Firstly, place the flooring with its concave surface (the face for a flooring piece with a concave bow, the back for a flooring piece with a convex bow), in contact, at its two ends, with a straight ruler or a reference plate. Then measure the maximum gap between the actual surface and the ruler or the reference plate with a calliper or feeler gauge. Record the gap width as the bowing degree, the (+) value as a convex bow and the (-) value as a concave bow.

In European Standard EN 13489:2017 Wood-flooring and parquet – Multi-layer parquet elements, there is no description for bowing, but only limitations for cupping and spring. The dimensional deviation limitation is listed below.

Our Manufacturing Standard GB/T 18103-2013 Engineered wood flooring, include tolerance and measuring methods for bowing boards. It uses a ratio of the maximum gap to the flooring's total length to limit the bow deviation. In 5.4.2, it states that the bow ratio in length should be no larger than 1.50%. For example, if a piece of flooring is 1200mm in length, 1200mm×1.00%=18mm, which means the maximum gap between bow flooring and the reference line should be no larger than 18mm. At the same time, the bowing should not impact the installation, and acclimatisation may be required.

We advise a bowing limit of 1.5% before the floor becomes problematic. So for example:

If a plank was 1850mm in length.

1.5% of 1850mm = 27.75mm

1.5% of 1200mm = 18mm

This means that if the gap between the edge of the boards and the middle of the board is 27.75mm or greater, the boards should not be laid. Obviously, the bowing tolerance can change depending on the length of the board

If the bowing is over the tolerance level, then we would recommend returning the flooring and replacing it with new packs. If you go ahead and install the flooring, then no flooring company will allow the goods to be returned.

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How can you reduce the risk of bowling?

1) Acclimate your flooring. - This allows the wood to adapt to the moisture content of the environment and reduce the risk of swelling. If you install a floor without acclimatisation, the boards will bow and potentially buckle as they adjust to the new environment.

2) Leave an expansion gap. - This allows space for a board to expand as moisture levels fluctuate, therefore reducing bowing as the wood will not compress together.

3) Reduce the moisture level. - Increased moisture levels are the main cause of bowing, so by reducing the moisture level, the chance of bowing is reduced. Any standing water should be wiped up immediately and it is recommended to check for any faulty water pipes before installing a floor. If you know your subfloor has a high moisture content, then it is advised to use an underlay with a damp-proof membrane to reduce the chance of moisture reaching the wood.

4) If bowing or cupping occurs, then you will have to try to release the moisture from the wood by drying or airing it out. This may take the board back to its original level positioning, however, if it does not, then you will have to replace the flooring.