Conversion from 5G to 5G-C

Summary 5G-C Conversion

Features 5G-C vs 5G?

Installation	Improved
Technical features	Improved
Market perception	Maintained
Patent situation	Improved vs Pergo “EP 941”
Compatibility	Yes

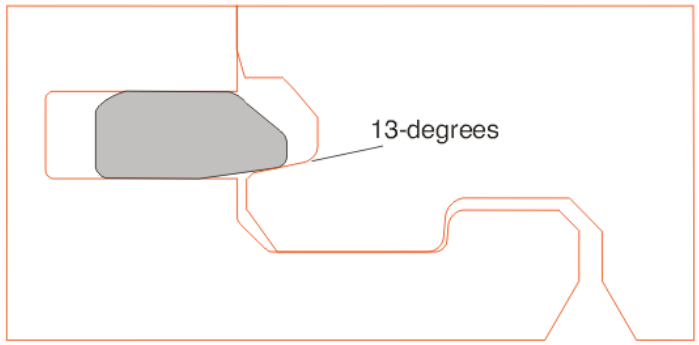
Profile difference

The difference between 5G and 5G-C profile are for 5G-C:

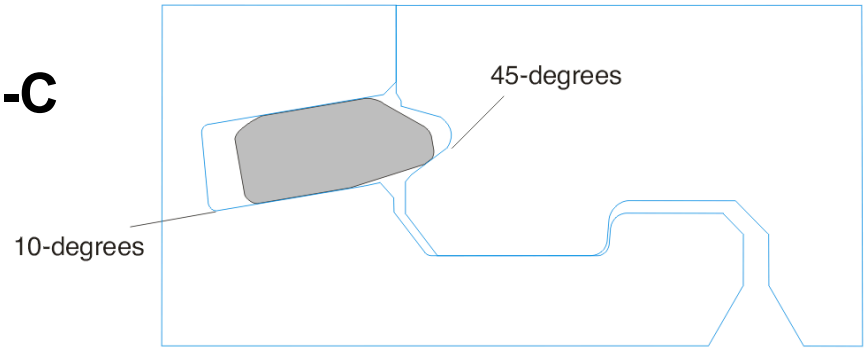
1) 5G-C tongue-groove is tilted 10-degrees (0 degree in 5G)

2) 5G-C wedge-groove has a 45-degree locking surface (10-20 degree in 5G)

5G



5G-C



Feature and Benefits

System	5G	5G-C
One easy movement installation	√	√
Strong vertical- and horizontal locking	√	√+
Suitable for all panel width	√	√
Locked directly after installation	√	√
Confirming click sound	√	√
Suitable for thinner board	√*	√

* Thinner boards are in 5G more sensitive to low quality HDF

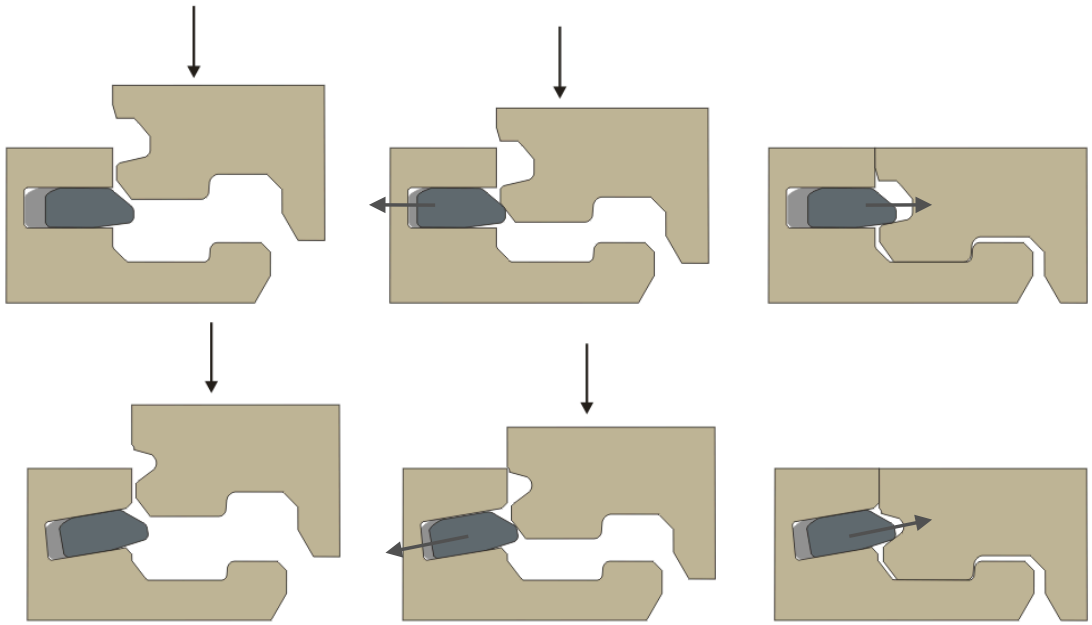
Installation

The installation principles are the same for 5G-C as for 5G original. The panel is folded down and the plastic tongue is by a vertical snap movement locking the board in the horizontal connection.

Improvements: The amount of force that is needed to push the 5G tongue into the inner position is reduced with ~20%*. The reduction comes from that the 5G plastic tongue in a 5G-C profile is tilted 10 degrees which allows the forces to be distributed in a more favourable way.

5G

5G-C



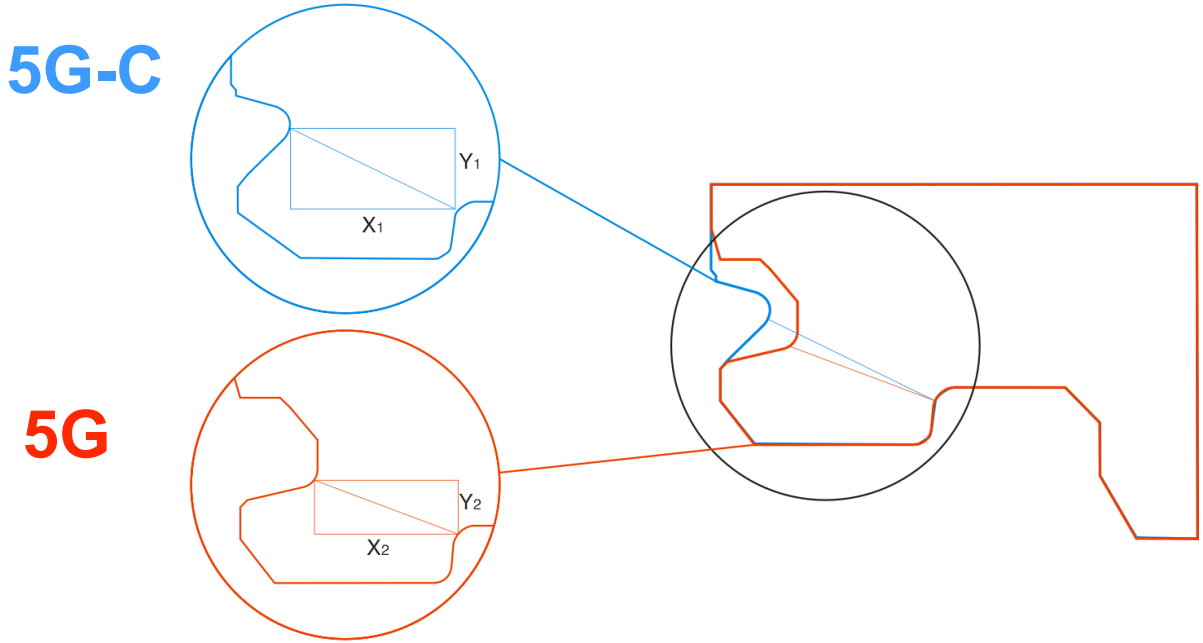
* The result can vary depending on core material and profile settings

Technical features

Horizontal loc strength Acc: ISO/FDIS 24334	Same
Castor chair test Acc: EN 425:2002	Improved
Climate test Acc: VTP 07	Same*
Load test Acc: VTP 02	Improved
Face-up insertion	Increased flexibility
Production tolerances	Improved

* Test have been preformed in limited amount of samples and conclusions are based on limited data but indications show same results

Explanation of technical improvement



With the above improvements, the 5G-C profile will have more material between the 5G wedge groove interacting with the 5G tongue and the locking groove interacting with the locking element, i.e. $Y_1 > Y_2$ & $X_1 > X_2$.

With this improved design, with added material both in the vertical and horizontal line, the profile will be able to carry a heavier vertical pressure (load test) and the risk of horizontal delaminating in the core material (horizontal cracks), will be reduced even further in an installation with heavy traffic.

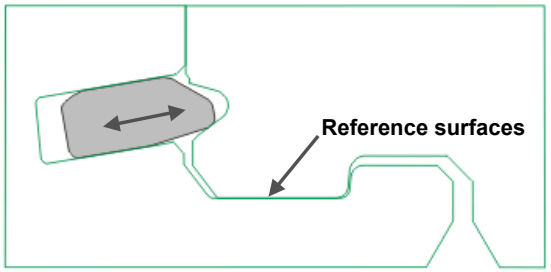
Explanation of improved production tolerances

The 5G-C wedge-groove has a 45-degree horizontal connection which gives the system improved performance in higher tolerances from production compared to 5G original.

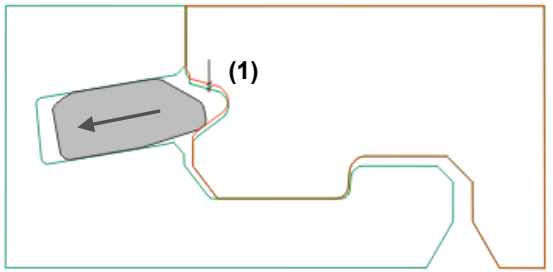
This can for example result in the following production scenarios:

1) If the 5G-C wedge-groove is produced to high up in the profile, then the 5G-C plastic tongue moves in and takes up the tolerances, still with excellent locking.

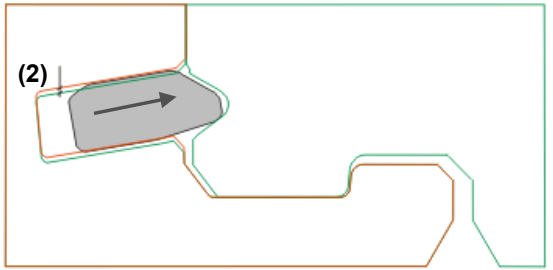
2) If the 5G-C tongue-groove is produced to high up in the profile, then the 5G-C plastic tongue moves out and takes up the tolerance, still with excellent locking.



Perfect product



Tolerances on tounge side, still perfect vertical connection



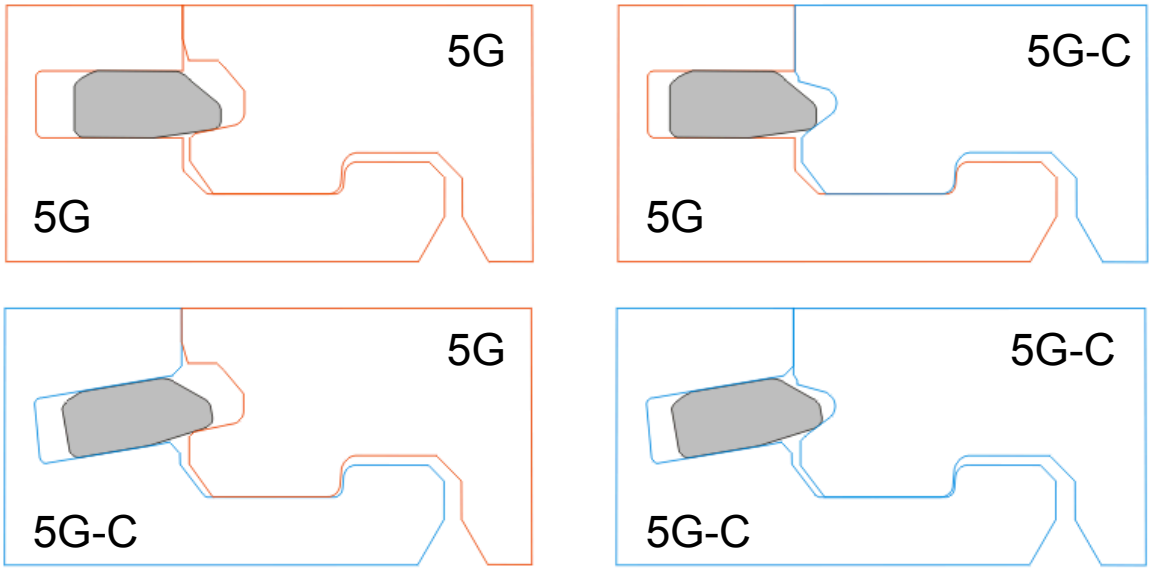
Tolerances on groove side, still perfect vertical connection

Conversion between 5G and 5G-C in production

The conversion between 5G and 5G-C can be made in one step and still possible to mix in the market.

Background facts:

- 5G tongue- and a 5G-C groove side are compatible with each other
- 5G groove- and a 5G-C tongue side are compatible with each other.
- Same plastic tongue is used for 5G as for 5G-C



Market Perception

5G-C is the “2010 version of 5G”

Installation	Even easier
Technical features	Improved strength & precision
Market perception	2010 Upgrade / Latest version
Patent situation	Improved further
Compatibility	Yes old and new can be mixed
Animations available	Yes – efficient sales support

Patent situation

Pergo has a granted EP patent 1 276 941 whose claims might be read on some embodiments if the claims are interpreted falsely, there are 3 defence lines with respect to this EP 941 patent for 5G & 5G-C.

1. Long side snapping?
   - The claim language provides that on the long sides *the lip (15) eventually "snaps" into the lower side (5) groove (12)*.
   - A typical Välinge long side with a with inclined locking element or small overlapping surfaces and a small play does not according to our opinion fall within this claim.
   - If above is deemed the case then also 5G original (and 5G-C) are outside the scope of EP 941
2. 5G-C does not have "mainly horizontal locking surfaces"
   - EP 941 further says; "contact surfaces are constituted by said mainly horizontal locking surfaces of said one or more snapping hooks (23) and matching undercuts (24)".
   - Välinge 5G-C has with its 45 degree locking angle not a "mainly horizontal surface" and should be clearly outside the scope of EP 941
3. EP 941 is challenged in EPO first instance opposition proceedings.
   - All claims are opposed based on the grounds of undue broadening, lack of novelty, and lack of an inventive step.
   - We see a considerable likelihood that the patent will be revoked. Facts and Arguments have been submitted by several opponents.
   - However, this remains uncertain until there is a final EPO decision, which may be in place within the next three years.

Note that above is a summary of the opinion from Välinge and/or it's legal experts. For a better judgement we refer to the more detailed opinion made by our legal experts, Grünecker in Germany. A court may come to the a different conclusion and we cannot give a guarantee to that extent because they, and not we, finally decide.