

# TENSION FREE TIMBER

– damage caused by poor kilning now a thing of the past



**RELAX** is a revolutionary drying technique for Nordic Pine and Nordic Spruce, which makes it possible to drastically reduce the problems occurring when using conventional kilning techniques.

**RELAX** is developed in co-operation with two other Swedish companies, Luleå Technical University and a producer of industrial chamber kilns. The technique is based on the use of large quantities of steam in the drying process, which gives a considerably better drying result compared to conventional kilning.

In the **RELAX** drying technique steam is initially used to heat up the timber, which minimizes the shake formation. Steam is also used at the end of the drying process to level out the moisture content, and thus giving a tension free timber.

**RELAX** dried timber is free from tension as the moisture content is the same within the whole piece. Conventionally kilned timber often has a wide spread of the moisture content between the surface and the centre of the piece. Since timber shrinks when it is dried, these differences in moisture content cause kiln tensions, which can lead to deformation and sometimes also shakes. These defects become particularly obvious when the piece is processed, e.g. through deep cutting.

#### The advantages with RELAX drying are many:

- Less problems with shakes, twist and cupping
- Completely stable timber which will not move when processed, e.g. deep cutting
- Insignificant variation in moisture content – within each piece, but also between different pieces from the same batch
- Tension free. Better than the EDG-rules highest quality grade (Exclusive)
- Strict control programme
- Documented and guaranteed by SCA

These samples show how a piece of timber reacts after deep cutting, depending on choice of drying technique.



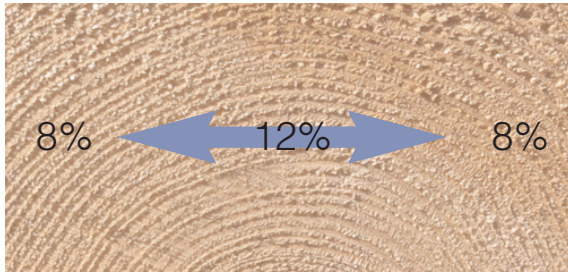
CONVENTIONAL KILNING



RELAX®

## Sawn timber dried to target moisture content 10 %

### AT THE END OF THE SAWMILL PRODUCTION PROCESS



**CONVENTIONALLY KILNED TIMBER** is not kilned down to a target moisture content in the centre of the piece, and the surface of the piece has a lower moisture content than the target moisture content. The idea is that the moisture content eventually will level out.

### AT DELIVERY



During the time up to delivery a levelling out takes place between the centre and the very dry surface through the natural moisture movement in the timber. The disadvantage with this procedure is that the dissimilarity between pieces (depending on density) causes an unwanted variable spread of moisture content between the pieces in the parcel. Furthermore the moisture movement in the timber during cold temperatures, leads to tension in the pieces that can cause deformation and even shakes during storage and processing.



**RELAX DRIED TIMBER** is dried to the target moisture content in the centre. The drier surface is restored to target moisture content by adding moisture from the outside in the form of steam. The steam also softens the piece, making tensions that are inevitable in the drying process disappear.



The result is that the whole piece contains the same moisture content throughout, and the timber becomes tension free. The RELAX process is subject to strict control procedures within SCA which makes it possible for us to guarantee the quality of the drying result.

**RELAX** drying can be used on all products with a target moisture content of 14 % or lower.

### A FEW EXAMPLES OF PRODUCTS FOR WHICH WE RECOMMEND RELAX ARE:

1. Furniture grades (8–10%)
2. Floor material (8–10%)
3. Windows (10–14%)
4. Turning components (10–12%)



SCA guarantee **RELAX** dried timber:

Average moisture content = target moisture content  $\pm 0.1 \times$  target moisture content when drying to a target moisture content of 14 % or lower.

Moisture content spread  $\leq 0.1 \times$  target moisture content when drying to a target moisture content of 14 % or lower.

Strict control programme with a minimum of 12 sample tests per drying chamber.

**RELAX** Individual drying documentation from SCA is available upon request.

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AN SCA FOREST PRODUCTS COMPANY

SCA Timber is one of the largest sawmill companies in Europe and includes seven sawmills and six planing mills. The total production of solid-wood products amounts to 1.4 million cubic meters.

SCA Timber is part of SCA's Forest Products business area, which produces publication papers for newspapers, magazines and catalogues, pulp and forest-based biofuels. SCA Forest Products also manages SCA's extensive forest holdings, supplies SCA's Swedish industries with wood raw materials and offers cost-efficient transport solutions to SCA's units.