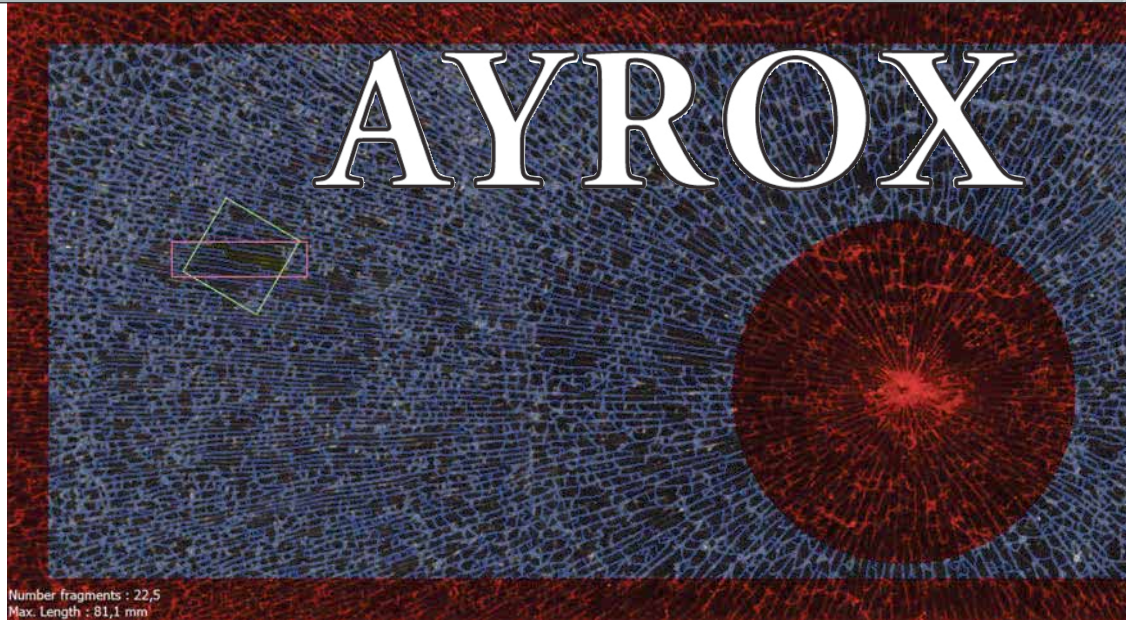


As of 1 July this year, all glass used in the construction sector must be conform to new regulations: CPR, Construction Product Regulation. These are applied together with the harmonized European Norms — hENs — which are enforced in European countries. In this article, Ayrox gives us an idea of its products developed specifically for these specific glass types.



In Europe, the conformity of glass in building is managed through tens of hENs (harmonized European Norms). The hEN to be followed depends on the type of glass produced, such as soda lime silicate glass, the treatment, i.e. thermally toughened, laminated, and so on, and also its intended use, laminated safety glass, for example. The harmonized norms are enforced in the EEA countries(1).

Each hEN specifies which tests have to be performed when introducing a new type of glass product (ITT – initial type test) and which are carried out daily in Factory Production Control (FPC). Given the large number of tests, both mandatory and informative, it is best to turn to your ITT provider to select the recommended tests for your needs. Ayrox can advise on the needed tests as it works with a Notified Body in Finland and

can manage ITT testing with the Finnish Notified Body. Ayrox can also redirect towards the Notified Body closer to your geographic area.

### DECLARATION OF PERFORMANCE

The Construction Product Regulation (CPR) came into force on 1 July 2013, replacing the Construction Products Directive (CPD). For building glass providers the main difference is that the Declaration of Performance (DoP) is now mandatory. The DoP replaces the Declaration of Conformity.

In the DoP manufacturers must state the assessment level and verification of constancy and performance level(s) of their products.

In daily Factory Production Control (FPC), producers must ensure that products sent to market are in conformity with the declared performance.

### NEW REQUIREMENTS FOR HEAT-STRENGTHENED GLASS

hENs are regularly updated, and it is worth checking the new requirements for your type of productions. Some recent novelties include the edge lift test and the local distortion for heat strengthened soda lime silicate glass (EN 1863-1:2011).

### EDGE LIFT FOR HORIZONTALLY HEAT STRENGTHENED GLASS

In the previous version of EN 1863 the flatness measurement was expressed by overall bow and local bow for both horizontally and vertically heat strengthened glass. For the vertically heat strengthened glass no exact tolerance values were given.

In the new version of EN 1863, the tests for flatness are separated according to the manufacturing of the

# GLASS IN BUILDING CONFORMITY – NEW NORMS IN FORCE

glass: three test for the horizontally heat-strengthened glass, and two tests for vertically heat strengthened glass.

For horizontally heat-strengthened glass the three tests are the overall bow, the roller wave and the edge lift. The new Ayrox RWG-EL is used to measure the edge lift and roller wave.

For vertically heat-strengthened glass, the two tests are as before, the overall bow and the local distortion, measurable with the Ayrox RWG-D. RWG-D is used also to measure local bow and roller wave on fully tempered glass.

## NEW TRENDS IN QUALITY CONTROL FOR HEAT-TREATED GLASS

The latest trend in quality control equipment by Ayrox is more and more towards non-destructive automated testing. An example of this is to use the GASP, the

surface compression meter, instead of the 4-point bender machine for the mechanical strength tests.

An example of an automated test is the FragGlass software, used in the mandatory fragmentation test for heat-treated glass. It automatically finds the longest particle and measures it. It also finds the 5 x 5 centimetre square with the least particles, and automatically calculates the number of particles in it, as specified in the European standards.

## LAMINATED GLASS

For all laminated glass types, regardless of assessment level and ma-

terial used in lamination, two tests are obligatory in FPC: resistance to high temperature and resistance to high humidity.

Traditionally, the resistance to high temperature test is carried out using the boiling test, which is a typical pass/fail test that does not give any other information about the product or about the condition of the production equipment. When the boiling test is replaced by the baking test, much more information will be available. It can be said that the baking test is an early-warning test for unintended changes in production conditions.

Each factory and laminated glass product has a level of temperature where bubbles will appear in the laminate when the process is under control. When adverse changes happen in the process, this temperature level will go down.

When a change is noted

in the baking-temperature level where bubbles appear, there is, normally, time to check the process and get it under control again before the temperature level goes below 100°C (minimum specified in the European Standard).

If only the boiling test is used, failed results mean that the process has to be stopped. In this case both products and production capacity will be lost.

Ayrox also provides humidity chambers with condensation and baking test ovens for laminators.

**Ayrox will be happy to discuss more about this subject at its stand B09 in Hall 22 at Vitrum 2013.**

*(1) Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.*



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