

Declaration of Performance (DoP)

Guidance on Declaration of Mechanical Strength

On 20 March, 2019, *EN 1096-4:2018 - Glass in building – Coated glass – Part 4: Product standard*, and *EN 1279-5:2018 - Glass in building – Insulating glass units – Part 5: Product standard* were cited in the L-series of the OJEU. The exact dates of applicability and end of coexistence period were left open. Only the years 2019 and 2020 were given.

In the corrigenda published on the 10 December 2019 in the *Official Journal of the European Union*, L 318/185, it is written that the beginning of the coexistence period was the 20.3.2019 and the end of the coexistence period was the 20 March 2020.

One distinct difference between the new standards and the superseded standards is the way by which the resistance to mechanical loads (wind, snow, permanent load and/or imposed loads) is declared in the DoP. In the new editions of *EN 1096-4* and *EN 1279-5*, it is required that **the mechanical resistance is given as the characteristic bending strength**.

The performance to be declared for coated glass shall be the characteristic bending strength of the glass substrate, given in Megapascal (MPa).

For insulating glass units, the bending strength of the components shall be declared. The characteristic bending strength is to be given for each glass pane which shall be obtained from the appropriate product standard, e.g. soda lime silicate glass – EN 572-1, borosilicate glass – EN 1748-1-1, etc., modified by the factor for the glass surface profile ksp from EN 16612:2019. The values for thermally and chemically treated products shall be obtained from the appropriate product standard, e.g. toughened soda lime silicate safety glass – EN 12150-1, etc. For laminated (safety) glass, it shall be obtained following the rules described in prEN 14449, Annex D.

- ▶ Actually, these new requirements **only change the way in which the mechanical strength is declared**, but do not result in any changes of the product properties themselves.

When EN 1096-4 and EN 1279-5 were revised, it was expected that new editions of the harmonized standards for the components would be available. This unfortunately is not the case due to significant delays in the assessment and citation process of new harmonized standards by the EC.

In the previous editions of the standards for the components, the mechanical resistance was given in millimeters. However, as these standards were written under the Construction Products Directive (CPD) rather than the Construction Products Regulation (CPR), the manufacturer has to declare the compliance with the entire product standard. This means that, by declaring the compliance with the product standard, the manufacturer implicitly also declares the characteristic bending strength which was given in the respective standard and which have not changed.



- ▶ Under the CPR, **the manufacturer only declares the characteristics given in the DoP.**

Insulating glass manufacturers may therefore assume that CE marked glass components comply with the requirements regarding the characteristic bending strength set in the applicable standards, although not explicitly stated in the DoP.

On the other hand, manufactures of substrates for coated glass, basic glass products, heat treated products or laminated (safety) glass may decide to switch the unit for the declaration of mechanical strength from millimeters to Megapascals for their entire product range, not just for coated glass and insulating glass units.

The reason is that the information for the DoP of processed products is partially taken from the DoP of the substrates or components, and the IT systems may not allow applying different units for the same characteristic. The glass thickness of monolithic products and laminated glass products will generally still be given in the denomination of the product.

- ▶ **It is also permitted that the manufacturers declare NPD** (No Performance Determined) for this characteristic.

It is acknowledged that the different ways of declaring the mechanical strength of glass products for use in building is not satisfactory. However, due to the complicated processes of preparing, approving, assessing and citing harmonized standards it is almost impossible to synchronize the citation of harmonized standards as it would be desirable, and it is hoped that this guidance helps to explain and understand the current situation which will be resolved step by step when more new editions of the harmonized product standards will be cited in the OJEU.

Glass for Europe is the trade association for Europe's flat glass sector. Flat glass is the material that goes into a variety of end products, primarily in windows and facades for buildings, windscreens and windows for automotive and transport as well as solar energy equipment, furniture and appliances. Glass for Europe brings together multinational firms and thousands of SMEs across Europe, to represent the entire building glass value-chain. It is composed of flat glass manufacturers, AGC Glass Europe, Guardian, NSG-Group and Saint-Gobain Glass Industry, and works in association with national partners gathering thousands of building glass processors and transformers all over Europe.