

TECHNOLOGY OFFER

EVALUATION OF THE STRAIN LIMITS OF INTERIOR PAINT AND COATING SYSTEMS

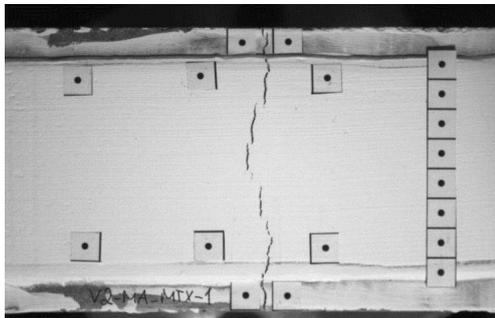
The BIEGEBALKEN-DEHNMESSVERFAHREN (Bending beam strain measuring method) developed enables a precise determination of the elasticity or crack bridging capacity of both coating systems and their individual components. Using this method, existing products can be tested and new products developed for use in cracked structures. Objective classification of the coatings enhances the selection of adequate coating systems and minimizes the risk for future renovation.

BACKGROUND

At present, there is no EU-wide standardized test procedure for determining the elasticity of interior coatings or the crack bridging capacity of coating systems. Also on the part of the coating manufacturers there is no or only insufficient information about these parameters. In practice, the selection of an interior coating with regard to its elasticity is made either by comparison with other coatings or on the basis of user experiences. This often leads to newly renovated properties, such as residential buildings, hotels, hospitals, etc., being in need of renovation again after only a short time (6 - 12 months), as the newly coated wall and ceiling surfaces already show cracks again. With an objective method for characterizing the elongation behaviour of interior coatings, the selection of a suitable interior coating for a building with known crack formation could be greatly simplified and future renovation costs avoided.

TECHNOLOGY

The BIEGEBALKEN-DEHNMESSVERFAHREN is an easy to use test method which enables the quick and reliable determination of the elasticity or crack bridging capacity of interior coatings and coating systems (filler + interior coating). It can be carried out on universal tensile and compression testing machines and does not require any special prior knowledge on the part of the user. By using a pre-defined carrier material for sample preparation, whose absorbency and adhesion properties are very close to those of a real wall and ceiling surface, realistic values can be achieved. Optical deformation analysis by means of digital image correlation (DIC) is used as the measuring technique during the execution of the test. Due to its high resolution, it enables an exact recording of the deformations during the stretching and cracking process. An extension of the application area of the method to facade paints is possible.



ADVANTAGES

- Objective classification of wall paints and coating systems
- Low costs and short test duration
- Fast and easy evaluation
- Reproducibility of results
- Use of universal tensile and compression testing machines

REFERENCE:
M076/2017

DEVELOPMENT STATUS:
Laboratory prototype, first measurements

KEYWORDS:

Elasticity;
Crack bridging capabilities;
Interior coating;
Coating system;
Crack-free interior

APPLICATIONS:

Paint production;
Material testing;
Quality assurance

IPR:

AT511282 granted,
EP-application filed

OPTIONS:

R&D co-operation
License contract

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