



- 1 View of a part of the setup for the assessment of material specific isopleth ranges, lighting on.
- 2 Results presented as an "Isopleth traffic light", which defines the conditions for use of the material
- 3 Incubation unit in a climate chamber with UVA irradiation

COMPETENCES IN DETAIL

MATERIAL SPECIFIC ISOPLETH RANGES

The assessment of material specific isopleth ranges offers an excellent method for comparison of different building materials according to their resistance against mould fungi. In individual incubation units specimens are exposed to controlled sets of temperature and relative humidity (12 different climates) which are set e.g. according to newly built constructions as well as to old building situations. Therefore at first suitable specimens are produced (for each variant at least 36 pieces). An intentional inoculation after a sterilization of the specimen provides the same starting point for all materials. The test organisms are recruited from abundant indoor species, typical species from water damages, material specific species and indicator species and can be varied according to the question investigated. As the Fraunhofer Institute for Building Physics IBP owns an unique collection of microorganisms, apart from

mould fungi there can also be provided bacteria or algae. The duration of the test is 100 days. On a regular basis test specimens are controlled microscopically, measured according to a given scheme (assessment scale) and are documented photographically. The results of the measurements according to the isopleth system show under which ranges of temperature and relative humidity a material will be sufficiently resistant or under which circumstances it may fail. Results are presented in form of an "Isopleth traffic light", which defines the conditions for use of a material. This static experiment forms also a basis for mathematical assessments under instationary conditions. In addition the setup can be equipped with lighting, even UVA irradiation can be realized for tests on special building products. Furthermore special sensing equipment (e.g. for CO₂) can be involved.

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