

Surface treatment of door elements

For wood and wood-based materials outdoors

No. 002/1

Annex 1 – Interior doors

Technical data sheet

Introduction

The surfaces of interior doors have to be able to withstand the most diverse demands. Normal room doors in residential buildings are mainly stressed by everyday use in the area of the door handle. Interior doors used to delineate closures or ends and room doors in public buildings, hospitals, schools and administrative buildings also have other roles to fulfil with regard to noise and crime prevention. The construction and structural design of these kind of components are based on complex and sophisticated systems. High demands are placed on their durability and resistance to physical forces as well as against the impact of different climates in the room. These elements are available on the market as individual parts (blank door panels, steel frames, seals, etc.) as industrial products. They are, on the one hand, bought and assembled by the manufacturer as a finished door element, but on the other hand, there are also door elements on the market that are completely built by the manufacturer. The treatment of the surface is therefore divided according to the various finished products and sub-divided into new paint and renovation paint work. In addition, we also refer to the standard SIA 257 painting work.

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1. Door panel surfaces from the factory

The door panel blanks are delivered by the industrial door panel manufacturers to the construction site or workshop of the subsequent processor with only machine-sanded door panel surfaces, without any kind of pre-treatment. There is a distinction made between the following surfaces for further treatment:

- a) covering pigmented paint
- b) natural treatment, no colour
- c) glazing paint
- d) for staining and varnishing

(please also refer to standard SIA 257, General terminology/ Types of coating material/Types of application).

All doors supplied ex-works are sanded with a grain size of 80 -100.

2. Intermediate storage

According to the Technical Data Sheet 001 "Delivery and installation conditions for doors, frames and door elements" (Art. 9 Door panels)

3. Functions of the surface treatment

3.1 Door panels and linings made from wood and wood-based materials

The area of the pore edges in wood types with coarse pores such as oak and ash, can only be effectively covered with a greater amount of effort. Brushing them out ensures that the pores are not just passed over with the paint.

Sharp edges that are not rounded do not receive sufficient coverage when painted, as the coating material pulls back from the edge.

When compared with solid wood, wood-based materials (depending on the type of process of course) have a better dimensional stability parallel to the plate surface. Some wood-based materials tend to swell greatly with the absorption of water, especially chipboard and fibreboard.

The wood-joining elements can lead to adverse effects on the paint (reduce the strength of the adhesion, inhibit properties). In these cases it is possible to rectify the situation with the use of insulating paint materials. Only sanding has the opposite effect in the case of inhibiting substances.

3.2 Steel frames, steel doors, aluminium surfaces

On zinc surfaces, a stable oxide layer forms in a normal atmosphere. In densely populated and industrial areas, water-soluble zinc salts form on the zinc surface as a result of the acid combustion gasses. Zinc is also attacked by the effect of alkalis (cement, lime, waste lye, and also by water).

In normal atmospheres, aluminium, in a similar way to zinc, also forms a thin, stable protective layer. However, just as it is true for zinc, one must note its resistance to acidic and alkaline media. Copper and brass may corrode as a result of the effects of alkalis and acids. The discolouring effects of copper ions is also of significant importance. The surfaces of metal components are mostly heavily polluted by oil, grease and perspiration released from the hand. It must be ensured that the ambient temperature and the temperature of the property are correspondingly suitable when painting metal frames. In certain circumstances,

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