

TIMBER DOOR CORES – DEFINITIONS

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INTRODUCTION

At this time none of the limited number of British Standards related to doors makes any reference to the term “solid core” “hollow core” or “semi-solid core” which are used by the timber door industry when describing their door products.

This Guide is intended to provide a definitive definition for each of these terms in an attempt to clarify the situation. These definitions are as follows.

HOLLOW CORE

Hollow Core – A door core, which when the face lining is removed, consists mainly of visible voids with only a criss -cross matrix of cardboard or other material used to support the face lining. This material is commonly referred to as “cellular or multicell core.”

The criss cross material will permit a view of the reverse face of the lining to the other door face.

Some solid timber or composite board is usually present to provide perimeter support and lock blocks.

Firm hand pressure on the face of the door may result in some flexing of the face panel.

SEMI-SOLID CORE

Semi-Solid Core – A door core, which when the face lining is removed has a number of large visible voids which are separated by pieces of solid timber, wood based panels or other non-cellulosic board material (e.g. plasterboard).

These voids may permit a view of the reverse face of the lining to the other door face. Sometimes the voids also contain multicell material.

Hand pressure on the door may result in some slight flexing of the face panels. Solid timber or other suitable blocking is usually present to the perimeter and at lock positions.

SOLID CORE

Solid Core - A door core which, when the face lining is removed, should not allow any visible voids such that the back of the opposite face material to be seen. The door core is completely filled with solid timber, wood based panel product or other non-cellulosic panel material (e.g. plasterboard).

Hand pressure on the face of the door will not result in any movement of the face lining at all.

Solid timber is usually present at the perimeter and can be provided at the lock position if a non-wood based material is used for the fill, although particleboard cores are available which carry no peripheral edge framing except, typically, a decorative edge lipping.

A number of wood based panel products contain voids as a result of the manufacturing process. Some boards such as 'flaxboard' have these as random occurrences others such as 'tube core' have them deliberately introduced as part of its controlled manufacturing technique. So long as these do not create a direct void across the thickness of the door they are considered as acceptable by industry.

PERFORMANCE REQUIREMENTS

The key element in any door selection is its performance. If the door needs to meet formal fire, thermal, acoustic or security requirements these may have to take precedence over the 'core' requirements.

Also if, for example, a particular core type is required to resist misuse or vandalism this may need to be more specifically highlighted to ensure that this can be accommodated by the door manufacturer in addition to the other performance requirements specified.

Absolute strength in use may vary between core types, which is usually reflected in the commercial cost of the product. As a guide the minimum density of core materials can be 360 kg/m³ for flaxboard; 520 kg/m³ for tubecore; 650 kg/m³ for particleboard and 480 kg/m³ for softwood when used in fire door applications.

Some aspects of performance requirements involve expensive research and testing programmes. If the specified core material has not been used in a particular manufacturer's product it may result in further testing being necessary before the product can be offered.