TECHNICAL PROVISIONS

FOR

DANSK DØR KONTROL

CONTROL BODY FOR INTERIOR

AND EXTERIOR DOORS

10th edition, December 2018

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Section 1

Applies to interior and exterior doors

1. Introduction

1. INTRODUCTION

A number of manufacturers of interior and exterior doors, united under the Association of Danish Door Manufacturers (Danish: Foreningen af Dørproducenter), decided at the association's founding general meeting in April 1988 to establish the control body **Dansk Dør Kontrol**.

The statutes of the producers' association state that its objectives are:

- to represent the common professional interests of its members vis-à-vis the authorities
- to help ensure the continued quality of members' products in the production of interior and exterior doors;
- to assist in the clarification of questions of a technical nature deemed to be of common interest to the members
- to work to gain influence in standardisation committees and similar national and international committees

These purposes are served by the present technical provisions, which are a common basis for the quality and environmental assurance of enterprises, and which are intended to help doors meet specified quality and environmental requirements which, as a minimum, comply with applicable laws and standards.

The term "interior doors" covers interior door elements manufactured for use in interior partitioning, including entrance doors, i.e. doors from an enclosed but typically unheated stairway and/or hallway area into a dwelling. Interior doors can also be so-called climate doors and/or wet room doors, i.e. doors specially designed for use between rooms with different climatic conditions or for rooms with high moisture exposure.
The requirements of these technical regulations presuppose uniform climatic conditions on both sides of the door, unless the door is sold as a door suitable for installation in a differential climate. Interior doors are available as loose door leaves or as doorsets.

The term "exterior doors" covers doorsets manufactured for installation in the climate envelope of buildings used for living and/or habitation. This means that the provisions do not apply to doors that are only intended for use in, for example, outbuildings or sheds. Exterior doors are only available as doorsets.

The present technical provisions have been discussed and approved by the Board of the Association of Danish Door Manufacturers in December 2018.

Section 2

Applies to interior and exterior doors

2. Production conditions and framework

2. PRODUCTION CONDITIONS AND FRAMEWORK

2.1 General

Any company wishing to join Dansk Dør Kontrol, DDK, must have personnel, production premises and equipment of such a scale and nature that there is a basis for the production of doors whose quality and uniformity as well as environmental conditions comply with the requirements laid down in these technical provisions.

The production of doors shall be the primary activity of the company, in order to ensure that the personnel possess at all times the necessary knowledge and experience to produce doors to a high level of quality and to do so in an environmentally sound manner.

In the case of special orders where, in agreement with the customer, the designs deviate from the standard in such a way that one or more of the requirements of these technical regulations cannot be met, this must be pointed out in the order confirmation. Please note that the products will still be DDK labelled.

2.2 Environmental conditions

The company shall ensure that all relevant legal and other requirements related to the external and internal (working) environment are continuously recorded, updated and complied with.

2.3 Sustainability

From product development and design to production and sales, the company must contribute to increased sustainability by continuously focusing on resource consumption and sustainability.

Manufacturers of DDK-labelled wooden doors must be able to prove that they are FSC and/or PEFC certified.
See: http://dk.fsc.org/ and http://www.pefc.dk/.

2.4 Management

Production must take place under the direction of a person appointed by the company, who is responsible for all aspects relating to the quality of the finished doors, internal control and environmental conditions, which presupposes a thorough knowledge of the technical provisions.
A person with competence to negotiate issues relating to the control body must also be appointed with the external supervisory body.

2.5 Drawing materials and description

For each production, the necessary documentation must be available in the form of drawings, sketches or descriptions.

Section 3

Interior doors

3. Interior doors

3.1 Resource usage and subcomponents

If the product includes subcomponents, the component supplier's specifications apply.

3.1.1 The wooden material

The basis for the use and control of wood or wood-based materials for doors and frames will be Appendix 2. See also Section 2.3.

Different types of timber species can be used for doors and casings, taking into account the properties of the wood material in relation to the satisfactory functioning of the finished elements.
The wood moisture content from drying to finished product must be as follows:

Casings	9 % ± 3 %
Door panels*	8 % ± 2 %

* Measured in the upper or lower stile of the door leaf

Plugging can be used according to the following guidelines:
On visible, less exposed surfaces, double plugs are allowed when the visual impression is deemed to be less obtrusive than knots.

Plugging must be carried out in the same type of wood as the piece. The grain must be the same in the plug and the surrounding wood.

Plugs must be glued with an adhesive classified as D3 according to EN 204.

Artificial materials may be used for filling to the same extent as plugging, provided that the material is dimensionally stable and compatible with the agents used in surface treatment.

Finger joints for longitudinal joints in casings and door mouldings and solid pine doors may occur. Scarfs must not result in cracking or hollowing of the finishing treatment. Scarfs must be completely sealed and glued with an adhesive that is classified at least as D3 according to EN 204.

3.1.2 Laminated wood

When purchasing laminated parts, it must be ensured that these are subjected to a control that guarantees against delamination.

3.1.3 Metal profiles

Under normal lighting conditions, the profiles must not show any defects in the form of rust, dents, warping or cracks. At a distance of 1.5 m, casting stripes, lamination stripes, stripes from bending or other surface defects must not be visible. This can occur on untreated elements.

3.1.4 Veneer

The thickness of the veneer used must be min. 0.5 mm and must not be transparent.
Since testing or inspection of workpieces or unfinished products during production testing or inspection of finished products veneers are based on a natural material and ring widths can vary, having identical veneer patterns in all door leaves cannot be expected.

3.1.5 Glue

Only glues that are suitable for the purpose from a functional and quality point of view and that guarantee against delamination via tested processes may be used for glueing.

3.1.6 Hardware

Hinges and latches must be of such strength that they can be expected to function satisfactorily throughout the life of the door, provided that the door is fitted, used and maintained in accordance with the manufacturer's instructions.

Supporting hardware (hinges) must have such rigidity that no noticeable deformation occurs and that their fixing is so stable that the position is permanently fixed.

The load-bearing capacity of hinges and their fixing to the door can be demonstrated by testing in accordance with the following.

Vertical load	Class 1	Class 2	Class 3	Class 4
Load in N	400	600	800	1000

Test method: EN 947. Classification: EN 1192.

Closing pressure
Locking fastenings must be selected such that the closing pressure must at least comply with the promised class as described according to EN 12217.

Test method: EN 12046-2

	Class 0	Class 1	Class 2	Class 3	Class 4
Closing pressure (N)	No requirements	75	50	25	10

Classification: EN 12217

3.1.7 Impact-absorbing plastic seals and/or weather seals

If impact-absorbing plastic seals and/or weather seals are used, their application and installation must comply with the supplier's instructions.

Impact-absorbing seals and/or weather seals must be of a type that allows replacement, and in all cases, the fixing of the skirting must be stable and without risk of interference with the closing and sealing function of the door.

Impact-absorbing skirting and/or weather strips must be resistant to the effects of the surface treatment systems and cleaning agents used and recommended by the manufacturer.

3.1.8 Surface treatment

The surface treatment systems used must be of a type resistant to the cleaning agents specified by the manufacturer.

Any repair to the surface treatment must be carried out in accordance with the manufacturer's instructions.

3.1.9 Packaging

Chlorine-containing plastic material should not be used for the packaging of interior doors. The disposal of the packaging must be specified in the installation/maintenance instructions.

3.1.10 Glass

Unless otherwise stated, glass is used and assessed in accordance with the glass supplier's instructions.

3.1.11 Kick plates

Unless otherwise stated, kick plates are used and assessed in accordance with the supplier's instructions.

3.2. Construction and execution

All classifications and verification of these take place before the door leaves the production site. Repeated inspections, tests and measurements under other climatic conditions or after installation may give rise to deviations in specified classifications. If the test items are to be transported in connection with a test, the items must be conditioned according to the respective test standards before the test begins.

For structural conditions in the installation and use situation, see Section 3.2.12.

3.2.1 Structural conditions, general

On casings, all edges that are exposed to the doorway must be rounded, possibly bevelled.

For joints of door frames for panel doors, a corresponding rounding, possibly bevelling, must be made above the end-grained wood.

Taking into account the structural conditions, all edges of the door leaf which are exposed must be rounded, possibly bevelled; however, it is accepted that no rounding or bevelling has taken place at the horizontal lines of the door leaf.

Visible surfaces, edges and corners must not show burrs or traces of tools or handling during manufacture or storage, nor present such sharp corners or edges that there is a risk of injury during handling or cleaning.

The materials used for the bottom of the door (or bottom solutions) must be of a material with high wear resistance. It can be hardwood, metal, composite materials or a combination of these.

In the case of untreated as well as treated casings, there must be no cutter marks on visible surfaces whose length exceeds 1.5 mm.

3.2.2 Structural conditions

Joints *(*air) between the casing and door leaf after installation must not deviate more than 2 mm from the nominal dimensions according to the manufacturer's descriptions. However, for classified doors (e.g. fire and soundproof doors), please refer to the manufacturer's approvals, as there may be additional restrictions in relation to the maximum deviation of the joints from nominal dimensions.

Note: Compliance with the above is essential for the function and durability of the door and must be observed regardless of the actual wall and floor conditions, which are outside the manufacturer's responsibility.

Joints at impact (rebate edge) are measured at the hinge side.

3.2.2.1 Height, width squareness (tolerances)

Measuring methods specified in EN 951

Class	Height / width mm	Squareness* mm
0	No requirements	No requirements
1	±2.0	±1.5
2	±1.5	±1.5
3	±1.0	±1.0

*Only the door leaf. Corrections for dimensional changes must be made if the wood moisture content is outside the limits specified in Section 3.1.1.

Classification: EN 1529

DDK requirements:

When checking the squareness, diagonal measurement can be used as a method. Here, a maximum difference of ±2.0 mm is allowed to meet the Class 2 requirement.

3.2.2.2 Steel doors

For steel doors, the following applies for height, width and squareness:

± 2 mm for nominal dimensions < 2 m

± 3 mm for nominal dimensions ≥ 2 m Dimensional tolerances: (at 15ºC)

3.2.2.3 Curvatures and flatness (tolerances)

Measuring methods specified in EN 952. Applies to door leaf only[2].

Class	Curvatures			Local flatness[3]
	Warpedness * Mm	Vertical curvature[1] mm	Horizontal curvature[1] mm	mm
0	No requirements	No requirements	No requirements	No requirements
1	10	10	6	0.6
2	8	8	4	0.4
3	4	4	2	0.3
4	2	2	1	0.2

[1]Vertical curvature - Curvature of the vertical lines of the door, Horizontal curvature - Curvature of the horizontal lines of the door.

[2] Door leaves up to M12 x M23 (w x h)

[3] The requirement for local flatness does not apply to steel doors

* The test method differs from EN 952. In practice, the vertical and parallel frame sections are used as reference planes

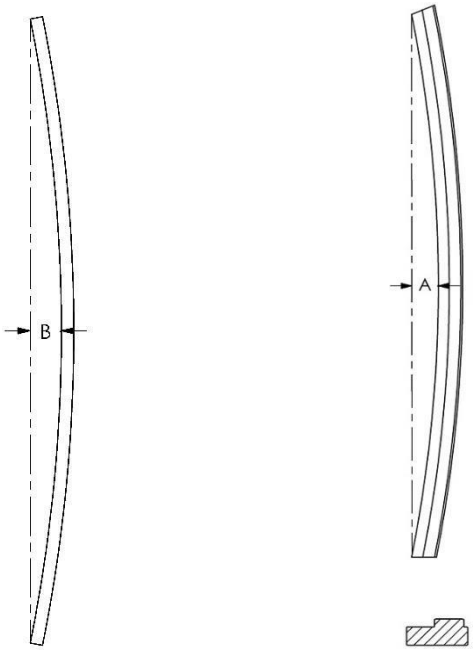
Classification: EN 1530.

DDK requirements:

- Class 3 up to M12 x M22.
- Class 2 from M12 x M22 up to M26.

The schematic diagram below shows how horizontal and/or vertical curvature is measured. The distance B is measured parallel to and maximum 20mm from the edge of the door leaf.

Figure 1. Schematic diagram for measurement of curvatu



Curvature door leaves

Edge curvature frame sections

Frame sections permissible edge curvature

Casing width mm	Permissible curvature* mm
≤ 100	± 3
> 100	± 2

- per casing length

3.2.3 Structural conditions, performance (durability)

3.2.3.1 Airtightness

As a general rule, there are no requirements for the airtightness of interior doors.

3.2.3.2 U-value

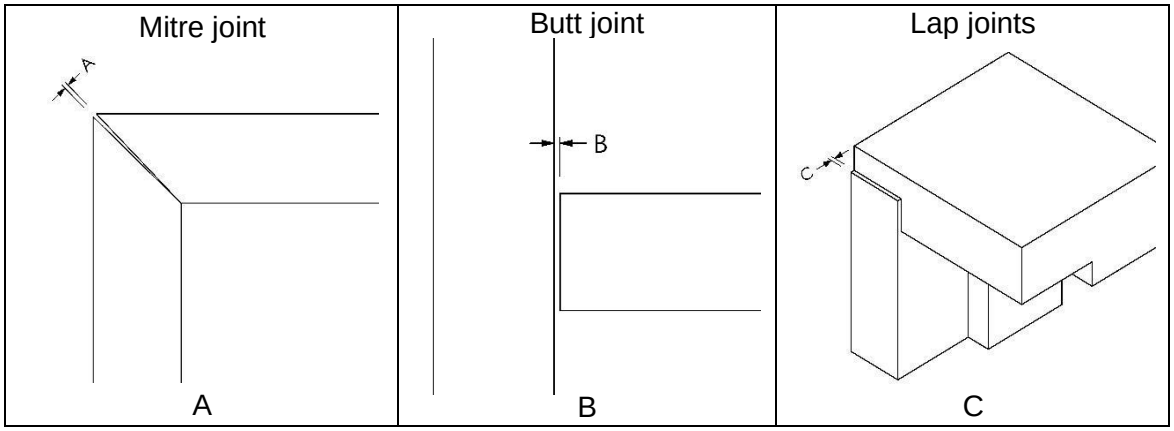
As a general rule, the energy performance of interior doors does not need to be documented.

3.2.4 Joinery

The alignment of corner joints, and of mullion joints, must be so precise that the joints achieve a high and permanent tightness.

In all joints of panel doors, studs or dowels must be fully glued and executed with applied pressure. Alternative methods may be used if the same or better strength is obtained.

All tenon and spline corner joints must have a fit such that they can only be assembled with difficulty by hand. Joints must not cause cracking of the frame pieces.



Tolerance Material	A	B	C
Wooden doors / casings	≤ 0.5 mm	≤ 0.6 mm	± 1.0 mm
Steel doors / casings	≤ 0.5 mm	≤ 1.0 mm	± 1.0 mm

Note 1: Compliance with the stated dimensions after assembly presupposes correct installation.
Note 2: Tolerance A for steel doors and casings applies only to welded mitre joints

Additional requirement for steel doors

The profiles are assembled by welding, mechanical welding, riveting, screwing, glueing or a combination of these.

The profiles must be cut in such a way that no burrs appear. Butting faces must have a flush fit. Differences in level > 0.2 mm are not permitted unless this is an intentional design detail

The flatness and rigidity of the joint must be ensured. This can be done by placing corner or angle plates in grooves.

3.2.5 Gluing

In general, the adhesive supplier's instructions regarding mixing conditions, temperature, applied pressure, pressing time, etc. must be observed.

Glue penetration or the structure of the veneer seams must not be visible on the veneer surface. When glueing smooth solid doors, cell doors or doors constructed with a synthetic core, there must be full adhesion throughout between the different layers, provided this does not conflict with specific functional requirements for the door.

3.2.6 Mounting hardware

Hardware which is visible when the unit is in its normal position of use must be mounted so that its edges or characteristic design lines are parallel with the edges of the unit.

Screws must fit the holes in the hardware, be firmly tightened and free from burrs which may cause cut fingers if touched.

The axis of the screw must not deviate by more than 10º from a plane perpendicular to the surface of the hardware, and the head of the screw must be flush with or below the surface of the hardware. Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. However, due to design conditions and/or the tolerances of the hardware, the grooves for the hardware may be larger or smaller.

3.2.7 Impact-absorbing plastic seals

If the installed plastic seals only have a shock-absorbing function, there may be a lack of contact between the moulding strip and the door leaf even with permissible curvatures in the door leaf. If the seals are of a light material, they will be translucent.

3.2.8 Surface treatment

The surface treatment, which has been carried out industrially, is dependent on the type and the application methods, which is why the following indications of quantities/ coat thicknesses can only be regarded as guides.

Lead, cadmium or chromium must not be used in surface treatment systems for DDK-labelled doors. In the case of finger joints, these may be visible after surface treatment.

3.2.8.1 General

As guidelines for achieving the stated outcomes, the following can be stated regarding structure and control:
The surface treatment must be built up from quality materials and applied, as a general rule, in at least 2 operations and in such a way as to obtain a uniform coat thickness on all visible surfaces. On some door types, the surface treatment of vertical edges may be replaced by coloured edge strips.
The indicative coat thickness is calculated as the average of a number of measurements of the dry total coat thickness.
The safety data sheets of the paint supplier must be observed.

3.2.8.2 Wooden door coat thicknesses

Door leaves:
Coatings (dry film paints) clear or pigmented varnishes:
≥50µ. Mean value
Coating paints: ≥50µ. Mean value
UV-based clear varnishes: ≥20µ. Mean value
UV-based pigmented varnishes: ≥30µ. Mean value

Note: As standard, door leaves are not surface treated in the top and bottom.

Casings:
All types of surface treatment except UV-based: ≥50µ

3.2.8.3 Steel doors
The surface treatment must be performed according to the following: Interior doors: C2
Classification: EN ISO 12944-2.

3.2.8.4 Steel casings
Interior casing: C2
Classification: EN ISO 12944-2.

3.2.8.5 Frame sections
Frame sections: C2
Classification: EN ISO 129442.

3.2.9 Window panes
3.2.9.1 Glass
Individual panes of glass must not give rise to visual distortions or contain defects or impurities in the glass in excess of the criteria described in the Glass Industry's criteria for the visual quality of insulated glass.
Sealed glazing units must be manufactured in accordance with EN 1279-1, and, as a main rule, be CE marked in accordance with EN 1279-5.
Tempered glass must be marked in accordance with EN 12150-1.

3.2.9.2 Installation of fire glass
Fire glass must be installed in accordance with the method used in the fire testing or in accordance with a method accepted in writing by the testing laboratory.

3.2.10 Burglary prevention
As a rule, doors are not designed to be burglar-resistant, but they may be fitted with hardware that has a burglar-resistant effect.

If the door is sold with a burglar-resistant classification, it must be tested according to EN 1628, EN1629 and EN 1630 and be classified according to EN1627.

The construction of the door must be such that any burglary or attempted burglary leaves visible traces.

3.2.11 Doors mounted in differential climate

3.2.11.1 Definitions

Warpedness - twisting of plane
Curvature of long side
Curvature of short side

3.2.11.2 Application

Doors with or without casement marketed as suitable for use in differential climates must be tested and classified in accordance with the following table.

Maximum permissible deformation

Class	Class			
Test parameter	0 (x)	1 (x)	2 (x)	3 (x)
Warpedness **T**	No requirements	8 mm	4 mm	2 mm
Curvature of long side **B**	No requirements	8 mm	4 mm	2 mm
Curvature of short side **C**	No requirements	4 mm	2 mm	1 mm
Local flatness	Door leaves supplied with or without casings must comply with the requirements set out in Section 3.2.2.3 of the Technical Provisions			
x: Test climate A to E as defined in EN 1121 **T**: The final warpedness				
B: The absolute difference between the final and the original curvature of the long or short side curve or the actual absolute curvature of the long or short side, whichever is the greater **C**: The final short side curvature				

3.2.12. Installation and use situation

3.2.12.1 General

The proper functioning of a door depends on correct handling and installation, which is why the manufacturer's storage and installation instructions must always be followed.

To not impair the properties of the door, care must be taken so that storage is carried out so that the absorption of moisture or drying out of the wood material is reduced to an absolute minimum. Otherwise, damage such as cracking, warping and other defects can be expected.

No doors/casement made of wood or wood-based materials are allowed:

- stored or installed in premises with a temperature below 5 °C
- stored or installed in premises with humidity outside the range 25-65 % RH
- installed in buildings that are not dried out
- stored in a manner other than the way specified by the manufacturer.

In the case of uniform climatic conditions on both sides of the door, a variation in the normal inside temperature (21 °C) ±2 °C and in the relative humidity of ±5 % in the range 25-65 % is accepted.

For curvatures, see Section 3.2.2.3.

Note: Negative pressure, e.g. from mechanical extraction, can cause permanent deformation of the door leaf, to the detriment of the door's sealing properties.

3.2.12.2 Assessment of surface treatment

All DDK-marked doors are industrially surfaces treated, which may result in minor variations in the quality and texture of the surface treatment.
When assessing the surface treatment, it is important to observe the following:

- The door should be assessed in regular daylight, not in direct sunlight or optical light.
- The door must be assessed vertically and at a distance of 1.5 m.

The door must be installed and maintained according to the manufacturer's instructions.

Section 4

Applies to exterior doors

4 Exterior doors

4.1. RESOURCE USAGE AND SUBCOMPONENTS

If the product includes subcomponents, the component supplier's specifications apply.

4.1.1 The wooden material

The basis for the use and control of wood or wood-based materials for doors and frames will be Appendix 2. See also Section 2.3 on environmental issues.

Different types of timber species can be used for doors and casings, taking into account the properties of the wood material in relation to the satisfactory functioning of the finished elements.
The wood moisture content from drying to finished product must be as follows:

		Exterior doors
Casings		10 % ± 3 %
Door panels*		10 % ± 3 %

* Measured in the upper or lower stile of the door leaf

Plugging can be used according to the following guidelines:
On visible, less exposed surfaces, double plugs are allowed when the visual impression is deemed to be less obtrusive than knots.

Plugging must be carried out in the same type of wood as the piece. The grain must be the same in the plug and the surrounding wood.

Plugs must be glued with an adhesive classified as D4 according to EN 204.

Artificial materials may be used for filling to the same extent as plugging, provided that the material is dimensionally stable and compatible with the agents used in surface treatment.

Finger joints for longitudinal joints in casings and door mouldings and solid pine doors may occur. Scarfs must not result in cracking or hollowing of the finishing treatment. Scarfs must be completely sealed and glued with an adhesive that is classified at least as D4 according to EN 204.

4.1.2 Laminated wood

When purchasing laminated parts, it must be ensured that these are subjected to a control that guarantees against delamination.

4.1.3 Metal profiles

Under normal lighting conditions, the profiles must not show any defects in the form of rust, dents, warping or cracks. At a distance of 1.5 m, casting stripes, lamination stripes, stripes from bending or other surface defects must not be visible. May occur on untreated elements. If the adhesion of the zinc is not good, the material must be discarded.

4.1.4 Veneer

The thickness of the veneer used must be min. 0.7 mm and must not be transparent. Since veneers are based on a natural material and ring widths can vary, having identical veneer patterns in all door leaves cannot be expected.

4.1.5 Glue

Only glues that are suitable for the purpose from a functional and quality point of view and that guarantee against delamination via tested processes may be used for glueing.

4.1.6 Hardware

Hinges and latches must be of such strength that they can be expected to function satisfactorily throughout the life of the door, provided that the door is fitted, used and maintained in accordance with the manufacturer's instructions.

Supporting hardware (hinges) must have such rigidity that no noticeable deformation occurs and that their fixing is so stable that the position is permanently fixed.

Vertical load	Class 1	Class 2	Class 3	Class 4
Load in N	400	600	800	1000

Test method: EN 947. Classification: EN 1192.

Resistance to corrosion

Hardware and screws	EN 1670		
	Corrosion class 4	Corrosion class 3	Corrosion class 2
Directly exposed to coastal weather conditions or other similar chemical influences	X		
Indirectly exposed to weather conditions and exposed to weather conditions other than those mentioned above		X	
Not exposed to weather conditions			X

Compliance with these requirements shall be documented by the supplier.

Hardware composed of different metals, rivets or screws which cause or may cause galvanic corrosion should not be used.

Closing pressure

Locking fastenings must be selected such that the closing pressure must at least comply with the promised class as described according to EN 12217.

Test method: EN 12046-2

	Class 0	Class 1	Class 2	Class 3	Class 4
Closing pressure (N)	No requirements	75	50	25	10

Classification: EN 12217

4.1.7 Impact-absorbing plastic seals and/or weather seals

If impact-absorbing plastic seals and/or weather seals are used, their application and installation must comply with the supplier's instructions.

Impact-absorbing seals and/or weather seals must be of a type that allows replacement, and in all cases, the fixing of the skirting must be stable and without risk of interference with the closing and sealing function of the door. Impact-absorbing seals and/or weather seals must be resistant to impacts from the surface treatment systems and cleaning agents used and recommended by the manufacturer.

4.1.8 Surface treatment

For resistance to corrosion of surfaces and edges, the summary table in Section 4.1.6 applies.

The surface treatment systems used must be of a type resistant to the cleaning agents specified by the manufacturer.

Any repair to the surface treatment must be carried out in accordance with the manufacturer's instructions.

4.1.9 Packaging

Chlorine-containing plastic material should not be used for the packaging of exterior doors. The disposal of the packaging must be specified in the installation/maintenance instructions.

4.1.10 Glass

Unless otherwise stated, glass is used and assessed in accordance with the glass supplier's instructions.

4.1.11 Kick plates

Unless otherwise stated, kick plates are used and assessed in accordance with the supplier's instructions.

4.2. Construction and execution

All classifications and verification of these take place before the door leaves the production site. Repeated inspections, tests and measurements under other climatic conditions or after installation may give rise to deviations in specified classifications. If the test items are to be transported in connection with a test, the items must be conditioned according to the respective test standards before the test begins.

For structural conditions in the installation and use situation, see Section 4.2.12.

4.2.1 Structural conditions, general

On casings, all edges that are exposed to the doorway must be rounded, possibly bevelled.

For joints of door frames for panel doors, a corresponding rounding, possibly bevelling, must be made above the end-grained wood.

Taking into account the structural conditions, all edges of the door leaf which are exposed must be rounded, if necessary bevelled; however, if the top edge / bottom edge has not been rounded or bevelled, it is acceptable.

Visible surfaces, edges and corners must not show burrs or traces of tools or handling during manufacture or storage, nor present such sharp corners or edges that there is a risk of injury during handling or cleaning.

The materials used for the bottom of the door (or bottom solutions) must be of a material with high wear resistance. It can be hardwood, thermally broken metal, composite materials or a combination of these.

In the case of untreated as well as treated casings, there must be no cutter marks on visible surfaces whose length exceeds 1.5 mm.
Outward opening doors with wooden bottom must be made with an inclined sill rebate with an inclination of at least 6°. The bottom edge of the door must be provided with drip groove.

Timber frame sills at inward opening doors must have an outward slope of at least 6° on the upper surface and must be provided with a watertight upturned edge set back far enough so that penetrating water is collected at vertical surfaces and led out into the open.

Inward opening doors must always have a drip at the bottom edge of the door leaf on the outside.

Drilled striking plates must not give rise to water absorption in the sill rebate of double or multi-leaf doors.

4.2.2 Structural conditions

Joints *(*air) between the casing and door leaf after installation must not deviate more than 2 mm from the nominal dimensions according to the manufacturer's descriptions. However, for classified doors (e.g. fire and soundproof doors), please refer to the manufacturer's approvals, as there may be additional restrictions in relation to the maximum deviation of the joints from nominal dimensions.

Note: Compliance with the above is essential for the function and durability of the door and must be observed regardless of the actual wall and floor conditions, which are outside the manufacturer's responsibility.

Joints at impact (rebate edge) are measured at the hinge side.

4.2.2.1 Height, width squareness (tolerances)

Measuring methods specified in EN 951

Class	Height / width mm	Squareness* mm
0	No requirements	No requirements
1	±2.0	±1.5
2	±1.5	±1.5
3	±1.0	±1.0

*Only the door leaf. Corrections for dimensional changes must be made if the wood moisture content is outside the limits specified in Section 4.1.1.

Classification: EN 1529

DDK requirements:
When checking the squareness, diagonal measurement can be used as a method. Here, a maximum difference of ±2.0 mm is allowed to meet the Class 2 requirement.

4.2.2.2 Steel doors

For steel doors, the following applies for height, width and squareness:

± 2 mm for nominal dimensions < 2 m
± 3 mm for nominal dimensions ≥ 2 m Dimensional tolerances: (at15ºC)

4.2.2.3 Curvatures and flatness (tolerances)

Measuring methods specified in EN 952. Applies to door leaf only[2].

Class	Curvatures			Local flatness[3]
	Warpedness * mm	Vertical curvature[1] mm	Horizontal curvature[1] mm	mm
0	No requirements	No requirements	No requirements	No requirements
1	10	10	6	0.6
2	8	8	4	0.4
3	4	4	2	0.3
4	2	2	1	0.2

[1]Vertical curvature - Curvature of the vertical lines of the door, Horizontal curvature - Curvature of the horizontal lines of the door.

[2] Door leaves up to M12 x M23 (w x h)

[3] The requirement for local flatness does not apply to steel doors

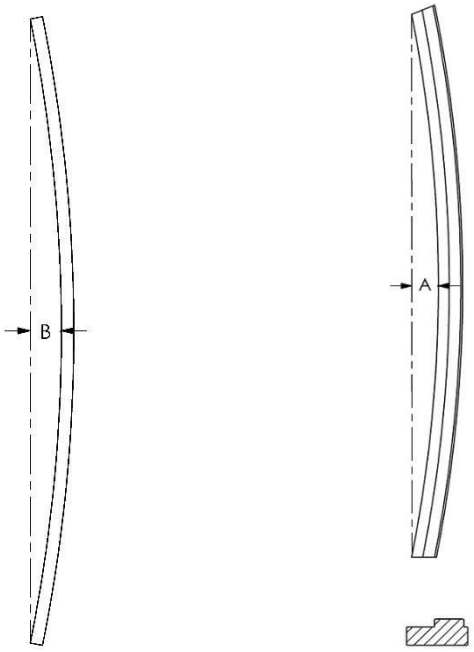
* The test method differs from EN 952. In practice, the vertical and parallel frame sections are used as reference planes

Classification: EN 1530

DDK requirements:

- Class 3 up to M12 x M22.
- Class 2 from M12 x M22 up to M26.

The schematic diagram below shows how horizontal and/or vertical curvature is measured. The distance B is measured parallel to and maximum 20mm from the edge of the door leaf.



Curvature door leaves Edge curvature frame sections

Schematic diagram for measurement of curvature of door panels

Frame sections permissible edge curvature

Casing width mm	Permissible curvature* mm
≤ 100	± 3
> 100	± 2

- per casing length

4.2.3 Structural conditions, performance (durability)

4.2.3.1 Airtightness

Measuring method EN 1026

Airtightness – Exterior doors						
Class		None	1	2	3	4
air pressure in Pa			150	300	600	600
Airtightness – area	$^{m3/}$(h x^{m2})		50*	27*	9*	3*
Airtightness – meter joint	$^{m3/}$(h x m)		12.50*	6.75*	2.25*	0.75*

* Reference airtightness at 100Pa and subsequent maximum test pressure
Classification: EN 12207

DDK requirements:
There is no requirement, but if airtightness testing is desired, Class 2 (by an average of measurements at negative and positive test pressures) may be prescribed as a guideline requirement under normal Danish conditions.
In addition, classification requirements should be assessed in relation to the specific use of the doors
- including their geographical location.

4.2.3.2 Driving rain density

Measuring method EN 1027

Driving rain density – Not protected installation of the element											
Class	None	1A	2A	3A	4A	5A	6A	7A	8A	9A	Exx
Maximum air pressure in Pa		0	50	100	150	200	250	300	450	600	>600

Driving rain density – Protected installation of the element								
Class	None	1B	2B	3B	4B	5B	6B	7B
Maximum air pressure in Pa		0	50	100	150	200	250	300

The test is marked as passed or failed
Source: EN 12208

DDK requirements:
No requirement, but if a driving rain test is desired, Class 6B can be prescribed as a guideline requirement under normal Danish conditions.

In addition, testing and classification requirements should be assessed in relation to the specific use of the doors - including their geographical location.

4.2.3.3 U-value

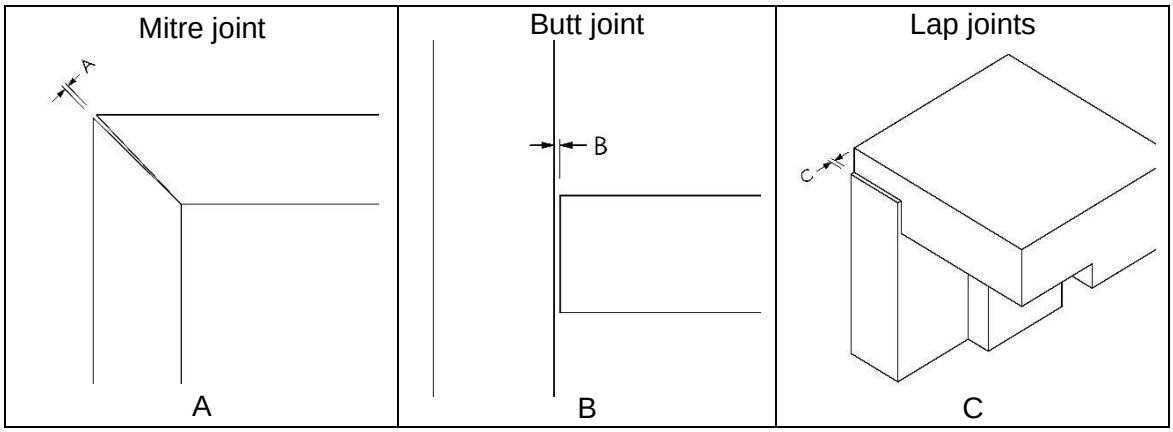
Documentation in accordance with the methods described in EN 14351-1:2006+A2:2016 must be provided for all data concerning the thermal performance of the doors. The values must be given for a door of a standard size according to the same standard, table E.2. If a customer so wishes, the current U-value for the given product must be disclosed, for example, in connection with the order confirmation.

4.2.4 Joinery

The alignment of corner joints, and of mullion joints, must be so precise that the joints achieve a high and permanent tightness.

In all joints of panel doors, studs or dowels must be fully glued and executed with applied pressure.

All tenon and spline corner joints must have a fit such that they can only be assembled with difficulty by hand. Joints must not cause cracking of the frame pieces.



Tolerance Material	A	B	C
Wooden door	≤ 0.5 mm	≤ 0.6 mm	± 1.0 mm
Steel doors	≤ 0.5 mm	≤ 1.0 mm	± 1.0 mm

Note 1: Compliance with the stated dimensions after assembly presupposes correct installation.
Note 2: Tolerance A for steel doors and casings applies only to welded mitre joints

For lap joints, there must be no gaps in the rebate edge > 1.0 mm.

No corner joints may contain openings from fastener slots or other similar openings which cause risk of water absorption.
all joints in sill and casement bottom rail rebates, including where plastic wedges are used, are secured against moisture absorption by a sealant.

Additional requirement for steel doors

The profiles are assembled by welding, mechanical welding, riveting, screwing, glueing or a combination of these.

The profiles must be cut in such a way that no burrs appear. Butting faces must have a flush fit. Differences in level > 0.2 mm are not permitted unless this is an intentional design detail. Corner or angle plates must be fitted in grooves where required to ensure the joint remains flush and rigid. In terms of corrosion resistance, hardware components must be of the same standard as the element itself.

4.2.5 Gluing

In general, the adhesive supplier's instructions regarding mixing conditions, temperature, applied pressure, pressing time, etc. must be observed.

Glue penetration or the structure of the veneer seams must not be visible on the veneer surface.

When glueing smooth solid doors or doors constructed with a synthetic core, there must be full adhesion throughout between the different layers, provided this does not conflict with specific functional requirements for the door.

4.2.6 Mounting hardware

Hardware which is visible when the unit is in its normal position of use must be mounted so that its edges or characteristic design lines are parallel with the edges of the unit.

Screws must fit the holes in the hardware, be firmly tightened and free from burrs which may cause cut fingers if touched.

The axis of the screw must not deviate by more than 10º from a plane perpendicular to the surface of the hardware, and the head of the screw must be flush with or below the surface of the hardware.

Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. However, due to design conditions and/or the tolerances of the hardware, the grooves for the hardware may be larger or smaller.

4.2.7 Surface treatment

The surface treatment, which has been carried out industrially, is dependent on the type and the application methods, which is why the following indications of quantities/ coat thicknesses can only be regarded as guides.

Lead, cadmium or chromium must not be used in surface treatment systems for DDK-labelled doors.

In the case of finger joints, these may be visible after surface treatment.

4.2.7.1 General

As guidelines for achieving the stated outcomes, the following can be stated regarding structure and control:
The surface treatment must be built up from quality materials and applied, as a general rule, in at least 2 operations and in such a way as to obtain a uniform coat thickness on all visible surfaces.
The indicative coat thickness is calculated as the average of a number of measurements of the dry total coat thickness.
The safety data sheets of the paint supplier must be observed.

4.2.7.2 Coat thicknesses

The coating must be applied with pigmented surface treatment systems and have a minimum coat thickness of 80µ on all visible surfaces and edges. This requirement does not apply to the top and bottom of the door leaf, which must simply be covered.

4.2.7.3 Steel doors

Surface treatment must be performed according to the following: Exterior doors: min C3
Exterior frame sections: C4
Classification: EN ISO 12944-2.

4.2.7.4 Steel casings

Exterior casing: min C3
Classification: EN ISO 12944-2.

4.2.7.5 Frame sections Frame sections:

min C3 Classification: EN ISO 12944-2.

4.2.8 Window panes

4.2.8.1 Glass

Individual panes of glass must not give rise to visual distortions or contain defects or impurities in the glass in excess of the criteria described in the Glass Industry's criteria for the visual quality of insulated glass.
Sealed glazing units must be manufactured in accordance with EN 1279-1, and, as a main rule, be CE marked in accordance with EN 1279-5.
Tempered glass must be marked in accordance with EN 12150-1.

4.2.8.2 Installation of glazing units

Insulated glass units must be fitted in such a way that the sealing compound of the glazing unit is not exposed to degrading UV radiation or the thermal properties of the glazing unit are not reduced.

4.2.8.3 Installation of fire glass

Fire glass must be installed in accordance with the method used in the fire testing or in accordance with a method accepted in writing by the testing laboratory.

4.2.9 Burglary prevention

As a rule, doors are not designed to be burglar-resistant, but they may be fitted with hardware that has a burglar-resistant effect.

If the door is sold with a burglar-resistant classification, it must be tested according to EN 1628, EN 1629 and EN 1630 and be classified according to EN 1627.

The construction of the door must be such that any burglary or attempted burglary leaves visible traces.

4.2.10 Installation and use situation

4.2.10.1 General

The proper functioning of a door depends on correct handling and installation, which is why the manufacturer's storage and installation instructions must always be followed.

To not impair the properties of the door, care must be taken so that storage is carried out so that the absorption of moisture or drying out of the wood material is reduced to an absolute minimum. Otherwise, damage such as cracking, warping and other defects can be expected.

No doors/casement made of wood or wood-based materials are allowed:

- stored in premises with a temperature below 5 °C
- stored or installed in premises with humidity outside the range 25-65 % RH
- stored in a manner other than the way specified by the manufacturer.

For curvatures, see Section 4.2.2.3.

Note: Negative pressure, e.g. from mechanical extraction, can cause permanent deformation of the door leaf, to the detriment of the door's sealing properties.

4.2.10.2 Assessment of surface treatment

All DDK-marked doors are industrially surfaces treated, which may result in minor variations in the quality and texture of the surface treatment.
When assessing the surface treatment, it is important to observe the following:

- The door should be assessed in regular daylight, and not in direct sunlight or optical light.
- The door must be assessed vertically and at a distance of 1.5 m.

The door must be installed and maintained according to the manufacturer's instructions.

Section 5

Applies to interior and exterior doors

5.1 Production-related environmental impacts
5.2 Product-related environmental impacts

5. Environmental impact

5.1 Production-related environmental impacts

5.1.1 Air pollution

The company must comply with the limit values set by the authorities. For example, for producers in Denmark, the guidelines from the Danish Environmental Protection Agency on Limiting air pollution from enterprises apply.

5.1.2 Waste water

The company must comply with the requirements set by the authorities for the discharge of waste water.

5.1.3 Waste

All waste must be sorted at source and other waste management must be in accordance with local conditions laid down in the authorities' waste regulations**.**

It is a requirement that wood-based waste and metal waste are recycled. Recycling covers reuse, composting or use for energy purposes.

Waste containing oil and chemicals must be stored and disposed of in accordance with the instructions of the authorities.

5.2 Product-related environmental impacts

5.2.1 Emission of hazardous substances

The products must not release hazardous substances at a level exceeding the national legislation of a given market. This can be demonstrated by testing the finished product or by documenting the individual elements of the product.

Section 6

Applies to interior and exterior doors

6. Consumer information

6. Consumer information

Companies affiliated to the DDK must provide written information on the following:

- storage and handling
- installation instructions/directions of use
- maintenance and cleaning

Section 7

Applies to interior and exterior doors

7. Quality management

7. Quality management

7.1 Background

The Construction Products Regulation requires each company to establish, document and maintain a production control system – Factory Production Control (FPC). The company's FPC must consist of procedures, regular inspections and tests/assessments, and the use of results to control incoming materials or components, the production processes and the finished product.

7.2 General

Results of tests/assessments requiring corrective or preventive action must be documented, as must the decisions taken in relation to them.

The company must appoint a person responsible for the FPC system at each production site. The company must ensure sufficient and qualified personnel for the installation, documentation and maintenance of the FPC system.

If the company has a certified DS/EN ISO 9001 system, or another certified quality management system, this is considered sufficient.

7.3 Equipment

Testing: Weighing, measuring and testing equipment must be calibrated and checked regularly according to procedures, frequency and criteria.

Production: equipment regularly used in production processes must be regularly inspected and maintained to ensure that use, wear and tear and defects do not cause failures in production processes. Inspection and maintenance must be carried out and documented in accordance with the company's written procedures.

7.4 Raw materials and components

The specifications of all raw materials or components essential for the finished product must be documented in such a way as to permit an acceptance check to ensure conformity with the specified requirements.

7.5 Production processes

The FPC system must document the different stages of production, identify control procedures and the persons responsible for control at all stages.

Throughout production, a record must be made of all checks and the results of these as well as of any corrective action. The records must be sufficiently detailed and accurate to demonstrate that all stages of production and controls have been satisfactorily carried out.

7.6 Product testing and evaluation

The company must establish procedures to ensure that established values for each product characteristic are maintained. By:

- testing or inspection of raw materials or components
- testing or inspection of workpieces or unfinished products during production
- testing or inspection of finished products

Testing or inspection must be performed and evaluated according to a test plan established by the company, which must also include frequency and criteria.

A number of doors and frames ready for dispatch are selected for inspection every week. The quantity taken may vary depending on internal needs but will be equivalent to a minimum of 5 doorsets.

7.7 Non-conforming products

The company must have written procedures specifying how non-conforming products are to be handled and recorded.

7.8 Archiving

The company must have written procedures for archiving or have archiving as an element of other procedures. Documentation of product testing and evaluation, as well as records of non-conforming products, must be archived for at least the same period of time as a guarantee on the product is given.

Please note that documentation related to CE marked products must be archived for at least 10 years.

Section 8

Applies to interior and exterior doors

8. Regulatory control

8. Regulatory control

A company's membership of DDK, Dansk Dør Kontrol, is conditional on:

- a labelling of finished products
- an internal finished goods inspection
- a third-party control

The inspections adopted must establish the degree of conformity between the technical provisions and the finished product and the corresponding documentation.

8.1 Labelling of finished products

Every company that is a member of DDK, Dansk Dør Kontrol, is obliged to label doors with a label approved by the board of the Association of Danish Door Manufacturers.

The label must be affixed to the rear edge of the door.

It is voluntary whether products for export are labelled.

Appendices

Applies to interior and exterior doors

Appendix 1. Third-party control. Normative
Appendix 2. Quality description of timber species.
Informative Appendix 3. Indicative service life.
Informative
Appendix 4. Bibliography

Appendix 1. Third-party control. Normative

A1. THIRD-PARTY CONTROL.

The purpose of the external inspection is: Through an impartial and critical review of the company's products and production conditions, to assist the company in its efforts to deliver a product quality taking into account environmental conditions that are at least in accordance with the specified requirements of these technical provisions.

The external inspection includes:

- sampling and assessment
- measurements/tests
- review of control forms for internal finished goods inspection
- review of technical documentation relating to performance
- reporting of individual visits
- verification that the company has a functioning quality management system
- status report for completed inspection round.

A1.1 Controller

The external control is carried out by an independent third party body approved by the board of the Association of Danish Door Manufacturers.

A1.2 Inspection visit

In each affiliated company, regular inspection visits are carried out twice a year.

DDK's secretariat determines the times for the ordinary visits, and the visits are unannounced. The visits can be conducted all working days, i.e. Monday through Friday, however, with the exception of general holiday periods.

The control times are in principle chosen at random for each company but must nevertheless be planned with due regard to the finances of the control body.

During the inspection visits, free access must be given to all premises, machinery, written documentation and other items directly related to the production subject to the control body. No information may be requested on matters falling outside the scope of the control body.

A1.3 Random sampling

For the external inspection, a number of doors equal to 10 % of the average weekly production, but not more than 15 doors, and 3 ready-to-ship casing sets are selected for a close examination.

The sample is selected at random so that it is composed of different door types/production orders. The removed doors must be finished and ready for shipment.

A1.4 Defect categories

The defects found in the sample are categorised according to the following defect description and as described in the table below.

Defect categories Defect types	Critical defects	Significant defects	Immaterial defects
Malfunction	Defect with a decisive influence on the door's functioning and service life	Defect with minor impact on the door's functioning and service life	Defect without impact on door's functioning and service life
Material defects	Defects having a decisive influence on the functioning, service life and appearance	Defects with minor impact on the door's functioning, service life and appearance	Defects without impact on the functioning and lifetime of the door and only with minor influence on the appearance
Processing error	Defects having a decisive influence on the functioning, service life and appearance	Defects with minor impact on the door's functioning, service life and appearance	Defects without impact on the door's functioning and service life and only with minor impact on the appearance
Other defects	Defects that destroy or seriously disfigure the door	Defects that slightly damage or disfigure the door	Defects that only slightly damage or disfigure the door
Defects in connection with environmental conditions	Defects that can have serious consequences for the environment/health	Defects that can have consequences for the environment/health	Defects that can have minor consequences for the environment/health
Product documentation errors (does not apply to areas already covered by third party controls)	Errors in the documentation that mislead the customer regarding properties that have a critical impact on safety, health and/or the environment	Errors in the documentation that could lead to the customer being misled. Systematic errors only count for 1.	Inaccurate documentation that can lead to a misconception/misunderstanding

A1.5 Corrective action

The defects found are treated according to the following guidelines.

A1.5.1Critical defects

There is no actual measurement, as only two options are given: approved or discarded.

If there is 1 critical error in the sample, this is rejected and additional control is performed (cf. Section A1.8).

A1.5.2Significant defects

All defects in this category are summed up and an average is calculated per door in the sample.

If the control limit, ØKGa, determined by the board is exceeded, additional or more stringent controls are introduced.

The board alone shall set the upper control limit for the average number of significant defects allowed per door.

A1.5.3Immaterial defects

All defects in this category are summed up and an average is calculated per door in the sample.

If the upper control limit, ØKGb, determined by the board is exceeded, quality is considered unsatisfactory and it is up to the control authority to decide whether or not to impose stricter penalties.

The board alone shall set the upper limit for the average number of significant defects allowed per door.

A1.6 Inspection report

The results of each visit are processed by the inspection body into an inspection report, two copies of which are sent to the company.

A1.7 Status report

At the end of an inspection round, a status report is drawn up showing the level of defects of the individual company.

Companies appear anonymously in the status report.

The status report is sent to the president of the Association of Danish Door Manufacturers.

A1.8 Additional inspection

For additional inspections carried out within 4 weeks of the ordinary inspection, a sample of the same size as for the ordinary inspection must be selected.

The corrective action is carried out according to Section B1.5, however, so that the finding of 1 critical error or exceeding of ØKGa results in stricter control, which must be carried out no later than 4 weeks after the first additional inspection.

If the average level of defect for significant defect is then below the ØKGa, an ordinary inspection is performed in the next inspection round.

A1.9 Stricter control:

Stricter control is carried out by the ordinary inspection officer. This inspection must be carried out within 4 weeks of the visit which gave rise to stricter control.

In the imposition of stricter control, normal sampling is carried out in accordance with Section B1.3, and review of internal control forms, documentation and brochure material.

Corrective action at stricter control is implemented, however, so that the finding of 1 critical error or an exceeding of ØKGa by a factor of 2, leads to a recommendation to the board for exclusion of the company according to the DDK statutes.

If the average level of defect for significant defect is between ØKGa and 2 x ØKGa, additional control is initiated.

If the average level of defect for significant defect is then below the ØKGa, an ordinary inspection is performed in the next inspection round.

If the need to carry out a stricter control is identified twice within 18 consecutive months, the board must be convened immediately after the second stricter inspection visit to assess the manufacturer's membership of the inspection body.

Appendix 2. QUALITY DESCRIPTION OF TIMBER SPECIES (INFORMATIVE)

QUALITY DESCRIPTION OF TIMBER SPECIES (Solid wood)

Slope of grain	Not exceeding 1:10
Knots	Only live or adhering dead knots may be present. In the case of timber species chosen because they are ranked on knots, knots should not occur. In all cases, knots must not impair functioning or service life.
Veneer	Systematic defects, such as insect holes, knotholes and knife scratches, must not be present in the veneer.
Twisting	Max. 3 mm per 10 cm workpiece width measured over 1 m
Blue sapwood Porous pith Resin pockets 3 x 30 mm without rep.	Not permitted on visible surfaces*.
Ring shakes Thunder shakes Brittle heart Overgrowth Insect holes Rot	Not allowed.
Cracks. Casings	Penetrating cracks and cracks over visible edges must not occur. Interior doors: Width < 0.8 mm, total length max. 30% of the length of the frame sections. Exterior doors: None on visible surfaces. Max. 5 on non-visible surfaces
Cracks. Door panels	Penetrating cracks and cracks over visible edges must not occur. Interior panel doors: max. 0.4 mm with a total length of 5% of the length of the piece measured per door side. Veneered doors none on visible surfaces Exterior doors: none on visible surfaces.
Pith.	Narrow and firm may appear on visible surfaces. For non-visible surfaces no special requirements are set.
Sapwood	If normal comercial products is without sapwood, sapwood must not occur.

* Visible surface means surfaces painted with clear or slightly pigmented lacquers, not full-coverage paints.

In all other surfaces dead and bark ring knots which appear porous or disfiguring must be plugged or filled.

APPENDIX 3 INDICATIVE SERVICE LIFE (INFORMATIVE)

INDICATIVE SERVICE LIFE

The Indicative Service life, which apply to all DDK-labelled doors, can be used when preparing product declarations or calculating environmental impacts.

The life of a door depends on many factors, the most important of which are:

- That installation has been carried out in accordance with the manufacturer's instructions.
- That maintenance is carried out according to the manufacturer's instructions (frequency and method).
- That the environment and frequency of use and application are as described in the tender documents.
- That the door has never been damaged.
- That no repairs have been made by anyone other than the manufacturer.

Cell doors	30 years
Solid doors - Classified	40 years
Solid doors - Unclassified	40 years
External door products	40 years
Wooden casings	40 years
Steel casings	50 years
Insulated glass units	30 years

APPENDIX 4 BIBLIOGRAPHY

Standard number	Edition	Name of standard
EN 204:2016	2016	Classification of thermoplastic wood adhesives for non-structural applications
EN 205:2016	2016	Adhesives - Wood adhesives for non-structural applications - Determination of tensile shear strength of lap joints
EN 947:	1999	Hinged or pivoted doors. Determination of the resistance to vertical load
EN 951	1999	Door panels - Method for measurement of height, width, thickness and squareness
EN 952	2000	Door panels - General and local flatness - Measuring method
EN 1026	2016	Windows and doors – Airtightness – Test method
EN 1027	2016	Windows and doors - Water tightness - Test method
EN 1121	2000	Doors - Behaviour between two different climates - Test method
EN 1192	2000	Doors - Classification of strength requirements
EN 1279-1 + EN 1279-1/AC	2004 2006	Glass in building – Insulating glass units – Part 1: Generalities, dimensional tolerances and rules for the system description
EN 1279-5 + A2	2010	Glass in building - Insulating glass units - Part 5: Product standard
EN 1529	2000	Door leaves - Height, width, thickness and rectangularity - Tolerance classes
EN 1530	2000	Door leaves - General and local flatness - Tolerance classes
EN 1627	2011	Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Requirements and classification
EN 1628 + A1	2011 2015	Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance under static loading
EN 1629 + A1	2011 2015	Pedestrian doorsets, windows, curtain walling, grilles and shutters. Burglar resistance. Test method for the determination of resistance under dynamic loading
EN 1630: +A1:	2011 2015	Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts
EN 1670	2007	Building hardware - Corrosion resistance - Requirements and test methods
EN 12046-2	2000	Operating Forces - Test Method - Part 2: Doors
EN 12150-1	2015	Glass in building - Thermally toughened soda lime silicate safety glass - Part 1: Definition and description
EN 12207	2016	Windows and doors - Airtightness - Classification
EN 12208	2001	Windows and doors - Watertightness - Classification
EN 12217	2015	Doors - Operating forces - Requirements and classification
EN 12219	2000	Doors - Climatic influences - Requirements and classification
EN 14351-1+A2	2006 2016	Windows and doors – Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets
EN 14351-2	2017	Windows and doors - Product standard, performance characteristics – Part 2: Internal pedestrian doorsets without resistance to fire and/or smoke leakage characteristics
EN 16034	2014	Pedestrian doorsets, industrial, commercial, garage doors and openable windows - Product standard, performance characteristics - Fire resisting and/or smoke control characteristics
EN ISO 9001	2015	Quality management systems — Requirements

EN ISO 10077-1 EN ISO 10077-1/AC	2006 2010	Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Part 1: General
EN ISO 10077-2 EN ISO 10077-2/AC	2012 2012	Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Part 2: Numerical method for frames
EN ISO 12944-2	2000	Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 2: Classification of environments
Glass manufacturing industry	July 2009	Visual Quality of Insulting Glass Units. Criteria for assessing deviations of the visual quality in Insulation Glass Units