

History, English

December 2006: - Version 3

Introduction

Following is added: (after "The Regulations also serve to ensure.....")

" Danish"

Following is added after the last section:

The use of these Technical Regulations for certification or inspection purposes is only permitted by prior written agreement with VinduesIndustrien.

2.7 Product labelling

Following section:

The manufacturer must label individual units to show, as a minimum, by whom and when the unit was manufactured.

Is amended:

The company must label individual units to make it possible to trace them back to the manufacturer. The label must include the manufacturing date.

3.2 Requirements concerning inspection of finished goods

Following section:

In order to ensure that finished goods are subjected to a certain minimum of inspection, a sample of five units ready for dispatch must be selected **every week** by the person in charge of quality. He must then conduct a thorough inspection to answer the questions which are listed for timber, PVCu and metal in Annexes 4, 5 and 6 or some other form of extended systematic in-house inspection.

Is amended:

In order to ensure that finished goods are subjected to a certain minimum of inspection, a sample of five units ready for dispatch must be selected **every week** by the person in charge of quality. He must then conduct a thorough inspection to answer the questions which are listed for timber, PVCu, metal and timber/aluminium in Annexes 4, 5, 6 and 7 or some other form of extended systematic in-house inspection.

4.0 General

Following section:

Product certification under the VinduesIndustrien Technical Regulations serves to ensure that the product leaving the manufacturer complies with the requirements contained in these Technical Regulations and that, in the longer term, products also comply with the EU Construction Products Directive and the derived harmonized European standards in the field.

Is amended:

Product certification under the VinduesIndustrien Technical Regulations serves to ensure that the product leaving the manufacturer complies with the requirements contained in these Technical Regulations and the EU Construction Products Directive.

4.1.1 Inspection frequency:

The section is deleted:

It is a prerequisite for maintaining a product certificate based on the VinduesIndustrien Technical Regulations that the compliance of the manufacturer's products and quality control with the basis on which the certificate was issued is verified by continuous monitoring (inspection visits) twice a year.

The certification body chooses the time of the ordinary biannual inspection visits, and visits may be paid without prior notification to the manufacturer.

Visits may be paid on any weekday, that is Monday to Friday, with the exception of public holidays and holiday periods.

In principle, the time of the visit is chosen randomly for each manufacturer but should be planned so as to keep travelling costs at a reasonable level.

And replaced with the following:

It is a prerequisite for maintaining a product certificate based on the VinduesIndustrien Technical Regulations that the compliance of the manufacturer's products and quality control with the basis on which the certificate was issued is verified by continuous monitoring (inspection visits) twice a year.

Under normal circumstances continuous monitoring comprises 2 inspection visits per year.

If the following conditions are met, the frequency of inspection visits may be reduced to 1 inspection visit per year:

- For an uninterrupted period of 2 years comprising 4 inspection visits there must have been no recorded cases of critical defects leading to the imposition of stricter control

- during the same period the number of significant defects at each of the 4 inspection visits must not exceed the upper control limit (ØKGa) minus 0.4 defects per unit
- the number of immaterial defects at each of the 4 inspection visits must not exceed the upper control limit (ØKGb)
- within 5 to 7 months of the annual inspection visit the manufacturer must forward electronically to the certification body a copy of the results of the in-house inspection

When a manufacturer has acquired the right to only 1 inspection visit per year this inspection visit frequency will continue for as long as the above limits and the forwarding of in-house inspection results are complied with.

If inspection reports are not forwarded or if an inspection visit finds the manufacturer in breach of the above limits for the number of defects, the frequency returns to 2 inspection visits per year.

The manufacturer may regain the entitlement to 1 inspection visit per year when the above conditions are met at two successive visits.

When manufacturing windows and doors in different materials, the minimum requirement is one certificate plus an additional one for each group of materials with a turnover in excess of DKK 10 million.

The certification body chooses the time of the ordinary biannual inspection visits, and visits may be paid without prior notification to the manufacturer.

Visits may be paid on any weekday, that is Monday to Friday, with the exception of public holidays and holiday periods.

In principle, the time of the visit is chosen randomly for each manufacturer but should be planned so as to keep travelling costs at a reasonable level.

5.0 Dimensioning, weathertightness and security against intrusion

Following section:

Window and door elements designed for sealed glazing units should be dimensioned to ensure the maximum calculated deflection at a pressure of 1200 Pa does not exceed 1/300th of the length of the longest edge of a glazing unit, however not exceeding 8 mm in the case of bonded glazing units. In connection with soldered glazing units deflection must not exceed 1/500th of the length of the longest edge of the unit, without exceeding 5 mm, however.

Note:

The above dimensioning ensures that the glazing unit and the casement/frame the unit is installed in will withstand a high wind load. It should also be noted that, in the longer term, large opening casement windows will often be affected by functional problems. It is therefore advisable not to manufacture opening casements with an area in excess of 1.7 m² and an edge length in excess of 1.5 m. If exceeding these dimensions, particular attention must be paid to e.g. casement dimension, fitting of hardware, hinge design and number of fastening points. In side hung units particular attention must be paid to the height/width (side) ratio.

If weathertightness testing of windows and doors is required, tests should be based on the following standards:

DS/EN 1026 for air permeability
DS/EN 1027 for watertightness.

Classification requirements should be indicated in conformance with:

DS/EN 12207 for air permeability
DS/EN 12208 for watertightness.

Normative classification requirements under normal Danish conditions would be:

Class 4 for air permeability at a pressure of 600 Pa for windows and doors in habitable rooms.
Class 3 for air permeability at a pressure of 600 Pa for external domestic doors.
Class 8A for watertightness (pressure 450 Pa for both windows and doors)

Test and classification requirements should be evaluated in relation to the actual use of the units, including the geographical location.

Is amended:

Window and door elements designed for sealed glazing units should be dimensioned to ensure the maximum calculated deflection at a pressure of 1200 Pa does not exceed 1/300th of the length of the edge of a glazing unit, however not exceeding 8 mm for bonded glazing units.

Note:

The above dimensioning ensures that the glazing unit and the casement/frame the unit is installed in will withstand a high wind load. It should also be noted that, in the longer term, large opening casement windows will often be affected by functional problems. It is therefore advisable not to manufacture opening casements with an area in excess of 1.7 m² and an edge length in excess of 1.5 m. If exceeding these dimensions, particular attention must be paid to e.g. casement dimension, fitting of hardware, hinge design and number of fastening points. In side hung units particular attention must be paid to the height/width (side) ratio.

If weathertightness testing of windows and doors is required, tests shall be based on the following standards:

DS/EN 1026 for air permeability
DS/EN 1027 for watertightness.

Classification requirements shall be indicated in conformance with:

DS/EN 12207 for air permeability
DS/EN 12208 for watertightness.

Normative classification requirements under normal Danish conditions would be:

Class for air permeability at an average of measurement of a positive and negative test pressure of 600 Pa for windows and outer doors.
Class 8A for watertightness (pressure 450 Pa for both windows and outer doors)

Test and classification requirements should be evaluated in relation to the actual use of the units, including the geographical location.

5.2 Thermal conditions

Following section is added from the section start:

Documentation in accordance with DS 418 or DS/EN 10077 parts 1 and 2 must be provided for all data concerning the thermal performance of the products.

If requested by customers, the company must provide information about the window or external door U-value and the proportion of glass in it as well as the total sunlight transmittance and solar energy transmittance of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBI Anvisning 213").

5.3 Timber material

Following section is deleted: (previous 5.2)

With the exception of cills, a window or door must be manufactured using the same timber species. The use of different timber species for casement and frames is permitted when ensuring that the different types of damp-induced changes in dimensions do not impact on function and weathertightness.

Following section is added:

If using different timber species in the same window/door component you must ensure that damp-induced changes in dimensions do not impact negatively on function and weathertightness.

Timber species mentioned in the following paragraphs may be used if meeting the base coat and surface treatment requirements mentioned under the respective timber species.

If there is more than one timber species in the hatched areas of illustrations in Annex 11, the applicable base coat and surface treatment requirement shall be the one which applies to the species with the poorest natural durability.

Hardwood:

Following section:

The timber species Dark Red Meranti, Red Lauan, Sipo (*Entandrophragma utile*), Araputanga (*Swietenia macrophylla*), Iroko, Teak and Oak may be used for windows and external doors provided the density is at least 500 kg/m³ at a moisture content of 12 ± 3%. Other hardwood species with similar durability as specified in DS/EN 350-2 may also be used.

The timber supplier must provide a declaration giving at least the timber species and its density.

On receipt of the timber, the manufacturer must perform a wood density check on 5% of the planks received. The selection of the planks must be evenly distributed over the entire batch; the density may be determined using sawn timber. The results must be recorded in weight tables and be kept with the tables recording data from in-house inspection of finished units.

At each inspection visit every other weight table completed since the previous visit is examined. A record is made of the number of units failing to meet density requirements; half of these are included as significant defects when counting defects for the total sample of 10 finished units.

Is amended:

Hardwoods such as Dark Red Meranti, Red Lauan, Sipo (*Entandrophragma utile*), Araputanga (*Swietenia macrophylla*), Iroko, Teak and Oak as well as other equally durable hardwood species which meet the requirements of DS/EN 350-2 may be used for windows and external doors under the following conditions:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.3. Timber density must be at least 500 kg/m³ at a moisture content of 12 %.

The average annual ring width of the timber must not exceed 4.5 mm

- Timber preservative treatment must be carried out in accordance with the general requirements listed under 5.5.1.

- Application of base coat and surface treatment must conform with treatment systems 3 or 4 - cf. 5.5.3.

The timber supplier must provide a declaration comprising at least the timber species and its density.

If the density of the bought-in timber is below 600 kg/m³, the company must perform a wood density check on 5% of the planks received. The selection of the planks must be evenly distributed over the entire batch; the density may be determined using sawn timber. The results must be recorded in weight tables and be kept with the tables recording data from in-house inspection of finished units.

At each inspection visit the weight tables which have been completed since the previous visit are examined; if cases of too low density are found, these are recorded in the inspection report.

If the company has failed to complete weight tables giving density data, this will be registered as a significant defect for the sample at the inspection visit.

Spruce:

Following section:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.2.2 and the additional definitions and requirements listed under 5.2.4. Timber density must be at least 500 kg/m³ at a moisture content of 12%.

- Timber preservative treatment must be carried out in accordance with the general requirements listed under 5.4.1.

- Application of base coat and surface treatment must conform with treatment systems 1, 2 or 5 - cf. 5.4.2 and 5.4.4.

Is amended:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.2 and the additional definitions and requirements listed under 5.3.4. Timber density must be at least 450 kg/m³ at a moisture content of 12%.

The average annual ring width of the timber must not exceed 4 mm.

- Timber preservative treatment must be carried out in accordance with the general requirements listed under 5.5.1.

- Application of base coat and surface treatment must conform with treatment systems 1, 2 or 2 ØKO - cf. 5.5.2

Following section is added:

The manufacturer must provide a declaration from each supplier/sawmill giving details of the spruce used.

The declaration must cover at least the points mentioned in Annex 13.

On receipt of the timber, the company must perform a wood density check on 5% of the planks received. The selection of the planks must be evenly distributed over the entire batch; the density may be determined using sawn timber. The results must be recorded in weight tables and be kept with the tables recording data from in-house inspection of finished units.

At each inspection visit the weight tables which have been completed since the previous visit are examined; if cases of too low density are found, these are registered in the inspection report.

If the company has failed to complete weight tables giving density data, this will be registered as a significant defect for the sample at the inspection visit.

Larch:

Following section:

Larch may be used for windows and external doors under the following conditions:

- All timber material which is external to the wet line must be 100% heartwood.

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.2.2 and the additional definitions and requirements listed under 5.2.4. Timber density must be at least 500 kg/m³ at a moisture content of 12%.

- Timber preservative treatment must be carried out in accordance with the general requirements listed under 5.4.1.

- Application of primer and surface treatment must conform with treatment systems 1, 2, 2 ØKO or 5 - cf. 5.4.2 and 5.4.4.

There are no specific requirements regarding penetration and retention when applying base coat in accordance with systems 1 and 2 but the process must be the same for the application of base coat to pine.

Is amended:

Larch may be used for windows and external doors under the following conditions:

- All timber material which is external to the wet line must be 100% heartwood.
- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.2 and the additional definitions and requirements listed under 5.2.4. Timber density must be at least 500 kg/m³ at a moisture content of 12%.

The average annual ring width of the timber must not exceed 4 mm.

- Timber preservative treatment must be carried out in accordance with the general requirements listed under 5.5.1.
- Application of primer and surface treatment must conform with treatment systems 1, 2 or 2 ØKO - cf. 5.5.2.

There are no specific requirements regarding penetration and retention when applying base coat in accordance with systems 1 and 2 but the process must be the same as for the application of base coat to pine.

The manufacturer must provide a declaration from each supplier/sawmill giving details of the larch used.

The declaration must cover at least the points mentioned in Annex 12.

Pine:

Following section:

The following requirements apply to the use of pine:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.2.2 and the additional definitions and requirements listed under 5.2.4. Timber density must be at least 500 kg/m³ at a moisture content of 12%.
- Timber preservative treatment must be carried out in accordance with the general requirements listed under 5.4.1.
- Application of base coat and surface treatment must conform with treatment systems 1, 2, 2 ØKO or 5 - cf. 5.4.2 and 5.4.4.

Each supplier/sawmill must provide a declaration giving details of the pine used.

The declaration must cover at least the points mentioned in Annex 11.

Is amended:

The following requirements apply to the use of pine:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.2 and the additional definitions and requirements listed under 5.3.4. Timber density must be at least 500 kg/m³ at a moisture content of 12%.
- The average annual ring width of the timber must not exceed 4 mm.
- Timber preservative treatment must be carried out in accordance with the general requirements listed under 5.5.1.
- Application of base coat and surface treatment must conform with treatment systems 1, 2 or 2 ØKO - cf. 5.5.2.

Each supplier/sawmill must provide a declaration giving details of the pine used.

The declaration must cover at least the points mentioned in Annex 12.

Requirements for proportion of heartwood in pine

3rd section

When using treatment systems 1 and 2 and 5

Is amended:

When using treatment systems 1 and 2.

Section 4 and 5:

When using treatment system 2 ØKO – cf. 5.4.2 – the proportion of heartwood in the ***hatched*** areas of Annex 10 illustrations must constitute 100%. In laminated profiles ***each*** laminate in the ***hatched*** areas of Annex 10 illustrations must have a heartwood proportion of 100%.

Furthermore, under treatment system 2 ØKO, ***all*** external glazing beads must have a heartwood proportion of 100%; alternatively, all glazing beads must have had base coats applied in accordance with treatment system 1.

Is amended:

When using treatment system 2 ØKO – cf. 5.5.2 – the proportion of heartwood in the ***hatched*** areas of Annex 11 illustrations must constitute at least 90%. In laminated profiles ***each*** laminate in the ***hatched*** areas of Annex 11 illustrations must have a heartwood proportion of at least 90%.

Furthermore, under treatment system 2 ØKO, *all* external glazing beads must have a heartwood proportion of at least 90%.; alternatively, all glazing beads must have had base coats applied in accordance with treatment system 1.

Inspection of heartwood proportion - treatment systems 1, 2 and 5:

Is amended:

Inspection of heartwood proportion - treatment systems 1, 2

Inspection of heartwood proportion - treatment system 2 ØKO:

1st Section:

At each inspection visit checks must be performed on the heartwood proportion of 20 fully finished or partly machined profiles. The profiles are selected with an equal distribution between casement and frame profiles for windows and doors respectively. The proportion of heartwood in the hatched areas shown in Annex 10 is recorded and the heartwood proportion and base coat application of glazing beads checked .

Is amended:

At each inspection visit checks must be performed on the heartwood proportion of 20 fully finished or partly machined profiles. The profiles are selected with an equal distribution between casement and frame profiles for windows and doors respectively. With the exception of casement heads and frame heads, the proportion of heartwood in the hatched areas shown in Annex 11 is recorded and the heartwood proportion and base coat application of glazing beads checked .

2nd Section:

A max. of 4 profiles with a heartwood proportion of between 80 and 100 % is permitted; each profile in excess of this counts as one significant defect.

If the total number of profiles with a heartwood proportion below 100% equals or exceeds 10, this is considered a critical error, triggering checks on a further 20 profiles during the same inspection visit. If during this extended inspection the number of profiles with a heartwood proportion below 100% also equals or exceeds 10, the manufacturer will be subjected to stricter control under the rules in Chapter 4.

Is amended:

A max. of 4 profiles with a heartwood proportion of between 80 and 90 % is permitted; each profile in excess of this counts as one significant defect.

If the total number of profiles with a heartwood proportion below 90 % equals or exceeds 10, this is considered a critical error, triggering checks on a further 20 profiles during the same inspection visit. If during this extended inspection the number of profiles with a heartwood

proportion below 90 % also equals or exceeds 10, the manufacturer will be subjected to stricter control under the rules in Chapter 4.

5.3.1 Definitions and measuring rules

Following section is added:

Please refer to the manual "Nordisk kvalitetssprog for træbranchen – nåletræ" ('The Nordic language of quality for the timber industry - softwood') ISBN 87-7756-568-1, published by Markaryds Grafiska, May 2000, extracts of which can be found in the following 6 pages.

5.3.4 Additional definitions and requirements for workpieces in softwood

Finger joints:

Following section:

The adhesive employed must meet all the requirements of class D4 in EN 204 as well as the requirements regarding resistance and strength at 80°C in accordance with Watt 91 (Institut für Fenstertechnik e.V. Rosenheim).

Is amended:

The adhesive employed must meet all the requirements of Class D4 in EN 204 as well as the requirements regarding resistance and strength at 80°C in accordance with EN 14257.

Inspection and testing

Following section is deleted: (after: "acclimatization for 72 hours at 20° and 50% relative humidity")

After the different water baths and acclimatization a visual inspection of the glued joint after 96 hours must show no openings in the glueline of the joint.

Is amended:

Once the above test cycle has been completed, a visual inspection of the glued joint must show no openings in the glue line.

Laminated timber:

Following section is added in the section end:

The laminating of timber species other than softwood is permitted provided it can be documented on the basis of testing or existing evidence that satisfactory joint properties can be achieved.

Profiles laminated from more than one timber species must meet the same requirements as profiles laminated from one timber species only.

5.4 Finishing

5.4.4 Joints:

8th Section:

In both doors and windows, all joints in cill and casement bottom rail rebates as well as glazing bars must be sealed against moisture absorption by special application of an end grain sealant or an externally applied triangular mastic joint. In aluminium-cill doors the entire end grain face towards the aluminium must be sealed with mastic sealant or another suitable sealing system employed. Inward opening doors with timber cills must be sealed in a similar manner at the external embrasure.

Is amended:

In both doors and windows, all joints in cill and casement bottom rail rebates as well as glazing bars must be sealed against moisture absorption by a fully covering application of end grain sealant or an externally applied triangular mastic joint. In aluminium-cill doors the entire end grain face towards the aluminium must be sealed with mastic sealant or another suitable sealing system employed. Inward opening doors with timber cills must be sealed in a similar manner at the external reveal.

5.4.4 Treatment system for timber-aluminium units:

Deleted

5.8.1 Hardware

Following is deleted:

Stainless steel screws must be used for stainless steel hardware.

Is amended:

Hardware and its fixing screws located outside the wet line must be sufficiently compatible to prevent the formation of galvanic corrosion.

Following is deleted:

in accordance with 7.2.2 of ISO/DIS 8248 may be required to prove its adequacy. A load of 750 Newtons must not cause failure in hinges, their fixing or in corner joints.

Is amended:

DS/EN 14608 may be required to prove its adequacy. As a minimum, the requirements of Class 2 under DS/EN 13115 must be met.

A subsequent increase in the load to 600 Newton must not cause failure in hinges, their fixing or in door and casement corner joints.

5.9.1 Glass and panels

Following section:

Individual panes of glass must not cause visual distortion, contain defects in the glass or impurities to a greater extent than described in DS 1094.0.

Is amended:

Double glazing shall be manufactured and marked according to EN 1279 and individual panes of glass must not cause visual distortions, contain defects in the glass or impurities to a greater extent than described in EN 1279.

Following section is deleted:

Unless requested otherwise by the buyer in writing, sealed glazing units must be DS certified. This means the glazing units must have undergone impartial quality control in accordance with DS/EN 1279 or DS 1094.0 (sealed glazing units, quality control). Glazing units of foreign origin may be used if proof of a similar quality control can be furnished.

If the window manufacturer supplies unglazed units, the quality control label with the certification body logo must carry the following text: "The certification does not cover the installation of glazing units"

5.9.2 Glazing beads

"Glasindustrien/GS"

Is amended:

"Glasindustrien"

PVCu windows

6.0 Dimensioning weathertightness and security against intrusion:

Following section:

Window and door elements designed for sealed glazing units should be dimensioned to ensure the maximum calculated deflection at a pressure of 1200 Pa does not exceed 1/300th of the length of the longest edge of a glazed unit, however not exceeding 8 mm in the case of

bonded glazing units. In connection with soldered glazing units deflection must not exceed 1/500th of the length of the longest edge of the unit, without exceeding 5 mm, however.

Note:

The above dimensioning ensures that the glazing unit and the casement/frame the unit is installed in will withstand a high wind load. It should also be noted that, in the longer term, large opening casement windows will often be affected by functional problems. It is therefore advisable not to manufacture opening casements with an area in excess of 1.7 m² and an edge length in excess of 1.5 m. If exceeding these dimensions, particular attention must be paid to e.g. casement dimension, fitting of hardware, hinge design and number of fastening points. In side hung units particular attention must be paid to the height/width (side) ratio.

If weathertightness testing of windows and doors is required, tests should be based on the following standards:

DS/EN 1026 for air permeability
DS/EN 1027 for watertightness.

Classification requirements should be indicated in conformance with:

DS/EN 12207 for air permeability
DS/EN 12208 for watertightness.

Normative classification requirements under normal Danish conditions would be:

Class 4 for air permeability at a pressure of 600 Pa for windows and doors in habitable rooms.
Class 3 for air permeability at a pressure of 600 Pa for external domestic doors.
Class 8A for watertightness (pressure 450 Pa for both windows and doors)

Test and classification requirements should be evaluated in relation to the actual use of the units, including the geographical location.

Is amended:

Window and door elements designed for sealed glazing units should be dimensioned to ensure the maximum calculated deflection at a pressure of 1200 Pa does not exceed 1/300th of the length of the edge of a glazing unit, however not exceeding 8 mm for bonded glazing units.

Note:

The above dimensioning ensures that the glazing unit and the casement/frame the unit is installed in will withstand a high wind load. It should also be noted that, in the longer term, large opening casement windows will often be affected by functional problems. It is therefore advisable not to manufacture opening casements with an area in excess of 1.7 m² and an edge length in excess of 1.5 m. If exceeding these dimensions, particular attention must be paid to e.g. casement dimension, fitting of hardware, hinge design and number of fastening points. In side hung units particular attention must be paid to the height/width (side) ratio.

If weathertightness testing of windows and doors is required, tests shall be based on the following standards:

DS/EN 1026 for air permeability
DS/EN 1027 for watertightness.

Classification requirements shall be indicated in conformance with:

DS/EN 12207 for air permeability
DS/EN 12208 for watertightness.

Normative classification requirements under normal Danish conditions would be:

Class 3 for air permeability at an average of measurement of a positive and negative test pressure of 600 Pa for windows and outer doors.
Class 8A for watertightness (pressure 450 Pa for both windows and outer doors)

Test and classification requirements should be evaluated in relation to the actual use of the units, including the geographical location.

“6.0 Thermal performance” has moved from section 6.0 to 6.2

A new headline is added:

6.1 Burglary prevention.

A new headline is added – the section reads as follows:

6.2 Thermal performance:

The temperature of the interior surfaces of the unit must not be less than 7°C provided there is a room temperature of 20°C and an external temperature of 0°C. This can be documented via calculations according to DS/EN ISO 10077-2.

In addition to the surfaces of casement and frame, the interior surfaces of the unit also include the sealed glazing unit, glazing gaskets and weather seal between frame and casement. However, the surface of weather seals is not included if air access to the weather seal is via a gap with a width of 4 mm or less and a depth of 5 mm or more.

Note:

The minimum temperature of 7°C mentioned above means that condensation will only occur when the relative humidity of the air in the room exceeds 42%. This is based on a room temperature of 20°C and an outside temperature of 0°C.

In dwellings and buildings with high humidity the consumer may wish to achieve a better condensation rating than is achieved through the above requirements. When such wishes are expressed, the window manufacturer ought to be able to document the surface temperature of the unit(s) in question when using sealed glazing units with warm-edge spacers or other technology.

In connection with the development of new types of windows the aim should be for condensation standards to exceed the above requirements in every respect. This also applies to the surface temperature of weather seals.

The consecutive numbering in Chapter 6 has changed afterwards.

6.5 Surface treatment

A new third section is added:

Profile materials with an external aluminium cladding must meet the requirements listed under 7.3 and the finishing and surface treatment must meet the requirements listed under 7.4 and 7.5.

6.7.1 Hardware

Following is deleted:

Stainless screws must be used for stainless steel hardware.

Is amended:

Hardware and its fixing screws located outside the wetline must be sufficiently compatible to prevent the formation of galvanic corrosion.

Following is deleted:

in accordance with 7.2.2 of ISO/DIS 8248 may be required to prove its adequacy. A load of 750 Newtons must not cause failure in hinges, their fixing or in corner joints.

Is amended:

in accordance with DS/EN 14608 may be required to prove its adequacy. As a minimum, the requirements of Class 2 under DS/EN 13115 must be met.

A subsequent increase in the load to 600 Newton must not cause failure in hinges, their fixing or in door and casement corner joints.

6.8.1 Glass and panels:

Following section:

Individual panes of glass must not cause visual distortion, contain defects in the glass or impurities to a greater extent than described in DS 1094.0.

Is amended:

Double glazing shall be manufactured and marked according to EN 1279 and individual panes of glass must not cause visual distortions, contain defects in the glass or impurities to a greater extent than described in EN 1279.

Following section is deleted:

Unless requested otherwise by the buyer in writing, sealed glazing units must be DS certified. This means the glazing units must have undergone impartial quality control in accordance with DS/EN 1279 or DS 1094.0 (sealed glazing units, quality control). Glazing units of foreign origin may be used if proof of a similar quality control can be furnished.

6.8.3 Installation of glass

Following is deleted:

”Samarbejdsorganisation (GS)”

7.0 Dimensioning, weathertightness and security against intrusion

Following section:

Window and door elements designed for sealed glazing units should be dimensioned to ensure the maximum calculated deflection at a pressure of 1200 Pa does not exceed 1/300th of the length of the longest edge of a glazing unit, however not exceeding 8 mm in the case of bonded glazing units. In connection with soldered glazing units deflection must not exceed 1/500th of the length of the longest edge of the unit, without exceeding 5 mm, however.

Note:

If weathertightness testing of windows and doors is required, tests should be based on the following standards:

DS/EN 1026 for air permeability

DS/EN 1027 for watertightness.

Classification requirements should be indicated in conformance with:

DS/EN 12207 for air permeability

DS/EN 12208 for watertightness.

Normative classification requirements under normal Danish conditions would be:

Class 4 for air permeability at a pressure of 600 Pa for windows and doors. in habitable rooms.

Class 3 for air permeability at a pressure of 600 Pa for external domestic doors.

Class 8A for watertightness (pressure of 450 Pa for both windows and doors)

Test and classification requirements should be evaluated in relation to the actual use of the units, including the geographical location.

Is amended:

Window and door elements designed for sealed glazing units should be dimensioned to ensure the maximum calculated deflection at a load of 1200 Pa does not exceed 1/300th of the length of the edge of a glazing unit, however not exceeding 8 mm for bonded glazing units.

Note:

If weathertightness testing of windows and doors is required, tests shall be based on the following standards:

DS/EN 1026 for air permeability

DS/EN 1027 for watertightness.

Classification requirements shall be indicated in conformance with:

DS/EN 12207 for air permeability

DS/EN 12208 for watertightness.

Normative classification requirements under normal Danish conditions would be:

Class3 for air permeability at an average of measurement of a positive and negative test pressure of 600 Pa for windows and outer doors.

Class 8A for watertightness (pressure of 450 Pa for both windows and outer doors)

Test and classification requirements should be evaluated in relation to the actual use of the units, including the geographical location.

“7.0 Thermal Condition” has moved from section 7.0 to 7.2

A new headline and text is amended:

7.1 Burglary prevention

A new headline and text is amended:

7.2 Thermal performance:

Documentation in accordance with DS 418 or DS/EN 10077 part 1 and 2 must be provided for all data concerning the thermal performance of the products.

If requested by customers, the company must provide information about the window or door U-value and the proportion of glass in it as well as the total sunlight transmittance and solar energy transmittance of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBI Anvisning 213").

The temperature of the interior surfaces of the unit must not be less than 7°C provided there is a room temperature of 20°C and an external temperature of 0°C. This can be documented via calculations according to DS/EN ISO 10077-2.

In addition to the surfaces of casement and frame, the interior surfaces of the unit also include the sealed unit, glazing gaskets and weather seal between frame and casement. However, the surface of weather seals is not included if air access to the weather seal is via a gap with a width of 4 mm or less and a depth of 5 mm or more.

Note:

The minimum temperature of 7°C mentioned above means that condensation will only occur when the relative humidity of the air in the room exceeds 42%. This is based on a room temperature of 20°C and an outside temperature of 0°C.

In dwellings and buildings with high humidity the consumer may wish to achieve a better condensation rating than is achieved through the above requirements. When such wishes are expressed, the window manufacturer ought to be able to document the surface temperature of the unit(s) in question when using sealed glazing units with warm-edge spacers or other technology.

In connection with the development of new types of windows the aim should be for condensation standards to exceed the above requirements in every respect. This also applies to the surface temperature of weather seals.

The consecutive numbering in Chapter 7 has changed afterwards.

7.3 Profile material (previous 7.1)

Following section:

Metal profiles for the manufacture of window and door elements in pure metal constructions must meet the materials specifications given in Dansk Ingeniørforening's (Danish Society of Engineers) standards for aluminium constructions DS 419 with special reference to DS 419's recommendations for the composition of alloy in accordance with DS 3012 and the detailed information on AlMgSi-alloys contained therein, number 6063 or similar.

Is amended:

Metal profiles for the manufacture of window and door elements in pure metal constructions must meet the materials specifications given in Dansk Ingeniørforening's (Danish Society of Engineers) standards for aluminium constructions DS 419. The use of type EN AW-6063, EN AW-6060 or similar alloys is permitted. The alloys must be heat treated to T5 or better.

7.4.2 Joints (previous 7.2.2)

Following is deleted:

”Samarbejdsorganisation (GS)”

7.5.1 Coating of aluminium (previous 7.3.1)

Following section:

Complete units or individual components in aluminium may be manufactured with or without surface treatment. However, the finished surface must be capable of functioning in an environment corresponding to Corrosion Class 3 (DS 419) for external surfaces and Corrosion Class K 2 (DS 419) for internal surfaces.

Coating requires pre-treatment in the form of chromating. The application process may employ a powder or wet paint of a recognized make designed for use on facades.

Is amended:

Complete units or individual components in aluminium may be manufactured with or without surface treatment. However, the finished surface must be capable of performing in an environment corresponding to Corrosion Class C 3 (DS 419) for external surfaces and Corrosion Class C 2 (DS 419) for internal surfaces.

Pre-treatment and coating must meet the requirements of GSB AL 631, including the requirements regarding protection against filiform corrosion. The company must be affiliated to the GSB or another similar inspection and control body.

7.5.2 Anodizing of aluminium:

Following section:

Overall, anodizing is based on Dansk Standard DS/ISO 7599 "Anodizing of aluminium and its alloys - General requirements of anodized layers on aluminium"

Is amended:

Overall, anodizing is based on Dansk Standard DS/EN 12373-1 "Anodizing of aluminium and its alloys - General requirements of anodized layers on aluminium"

7.7.1 Hardware (previous 7.5.1)

Following is deleted:

Stainless screws must be used for stainless steel hardware.

Is amended:

Hardware and its fixing screws located outside the wetline must be sufficiently compatible to prevent the formation of galvanic corrosion.

Following is deleted:

in accordance with 7.2.2 of ISO/DIS 8248 may be required to prove its adequacy. A load of 750 Newtons must not cause failure in hinges, their fixing or in corner joints.

Is amended:

in accordance with DS/EN 14608 may be required to prove its adequacy. As a minimum, the requirements of Class 2 under DS/EN 13115 must be met.

A subsequent increase in the load to 600 Newtons must not cause failure in hinges, their fixing or in door and casement corner joints.

7.8.1 Glass and panels (previous 7.6.1)

Following section:

Individual panes of glass must not cause visual distortion, contain defects in the glass or impurities to a greater extent than described in DS 1094.0.

Is amended:

Double glazing shall be manufactured and marked according to EN 1279 and individual panes of glass must not cause visual distortions, contain defects in the glass or impurities to a greater extent than described in EN 1279.

Following section is deleted:

Unless requested otherwise by the buyer in writing, sealed glazing units must be DS certified. This means the glazing units must have undergone impartial quality control in accordance with DS/EN 1279 or DS 1094.0 (sealed glazing units, quality control). Glazing units of foreign origin may be used if proof of a similar quality control can be furnished.

7.8.3 Installation of glass:

Following is deleted:

”Samarbejdsorganisation (GS)”

Chapter 8 Timber/aluminium windows and doors

The entire chapter is new.

Annexes at a glance

Following is amended:

Annex # 7. Form for use in in-house inspection of timber/aluminium windows

Annex # 13. Paradigm for the declaration of spruce

Following headline:

Annex # 11. Paradigm for declaration of pine

I amended:

Annex # 12. Paradigm for the declaration of pine/larch

Following headline:

Annex # 12. Installation instructions for sealed double glazed units (issued by GS)

Is amended:

Annex # 14. Installation instructions for sealed glazing units (published by Glasindustrien)

Annex 1. Minimum requirements as regards extent of information in brochures

Following section:

6.1. U-value: $W/m^2 \text{ } ^\circ C$ for window size 1230 x 1480 mm using double glazed low energy unit

Is amended:

6.1. U-value: $W/m^2 \text{ } ^\circ C$ for window size 1230 x 1480 mm

Annex 7

The entire Annex is new

Annex 8, page 3

Missing or
unauthorized label

Immaterial defect per wrongly marked unit

Annex 8, page 5

The numbering of the headline:

5.2 Timber material

Is amended:

5.3 og 8.3. Timber material.

The consecutive numbering in the Annexes at a glance has changed afterwards.

Following:

The measured average width of annual ring ≥ 4 mm

Annex 8, page 5 and 6

Is amended:

The measured average width of annual ring ≥ 4.5 mm (hardwood) - Significant defect

Annex 8, page 14

Following is amended (in connection to “Lacking alignment in corner rebate joints”):

Leaky Joints:

- up to 0.3 mm	B
- between 0.3 and 0.6 mm	U
- in excess of 0.6 mm	V

Joint not flush

- by up to 0.3 mm	B
- by between 0.3 - 0.6 mm	U
- in excess of 0.6 mm	V

Annex 8, page 19 (new)

Following headline:

Specific defects: Metal (aluminium)

Is amended:

Specific defects: Metal (aluminium) and timber/aluminium windows

Annex 8, page 20

Following headline has amended the numbering:

7. Surface treatment

Is amended:

7.5 Surface treatment

Following is added:

Leaky joints	
- gap of up to 0.3 mm	B
- gap between 0.3 - 0.6 mm	U
- gap in excess of 0.6 mm	V
Joint not flush	
- by up to 0.3 mm	B
- by between 0.3 - 0.6 mm	U
- in excess of 0.6 mm	V

Following section:

Average layer thickness on anodized surface below 18 µm (recorded as 1 defect for the entire sample)

Is amended:

Average layer thickness on anodized surface below 16 µm (recorded as 1 defect for the entire sample)

Following headline:

Annex 12

Paradigm for declaration of pine

Is amended:

Annex 12

Paradigm for the declaration of pine (European Redwood)/larch

The entire annex 13 is new. The consecutive numbering of the following annexes has changed afterwards.

Annex 16

Expected outcome of industrial surface treatment of timber elements

Following section is deleted:

Visible faces of closed element	DLG**
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** Opaque, sealed and smooth surface (DLG) Faces, edges and rebates have a uniform colour and sheen and feel smooth. Unevenness arising from the base may occur. Pores, holes, fissures and joints are sealed but not necessarily filled.

Is amended:

Visible faces of closed element	DLGU**
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** Opaque, sealed, smooth and filled surface (DLGU) Faces, edges and rebates have a uniform colour and sheen and feel smooth. Pores have been sealed. Holes, fissures and joints have been sealed and filled. Unevenness arising from the base may occur. Hardwood is exempt from the requirement of surfaces being filled.