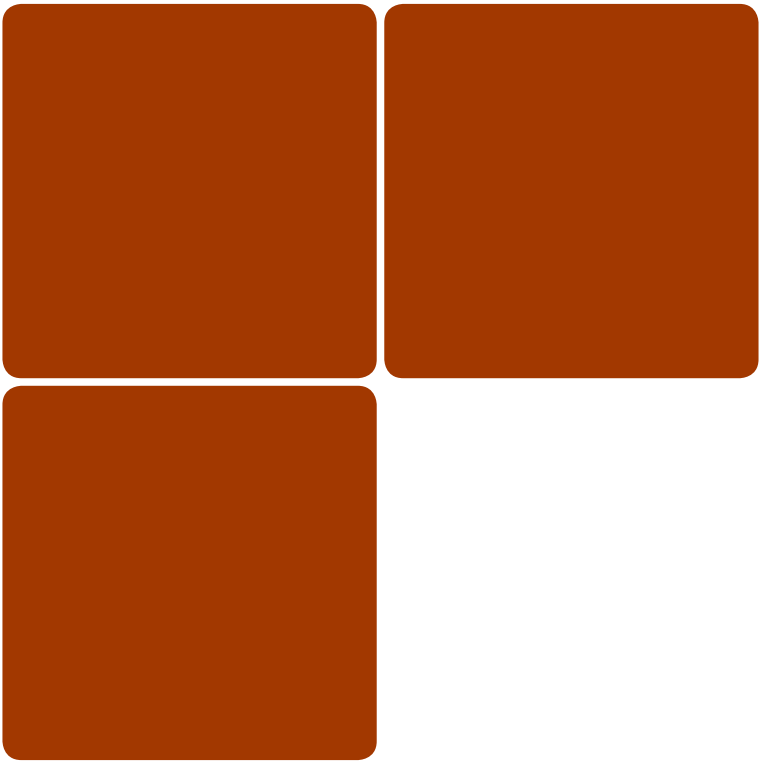
natura

user manual
windows and doors
timber



idealcombi

Idealcombi is delighted that you have chosen our windows and external doors which we hope you will enjoy for many years to come.
Idealcombi A/S is one of the largest and most well-consolidated window manufacturers in Denmark. When purchasing windows and doors from Idealcombi, you are a guaranteed beautiful and durable products requiring only a minimum of maintenance.
Idealcombi also enjoys a reputation for using the best raw materials available. With one of Denmark's largest window production facilities under one roof in north-western Jutland, we combine high standards of craftsmanship with state-of-the-art production technology.
Windows and doors from Idealcombi are your guarantee of high-quality products. Idealcombi is a member of the Association of Danish Windows Manufacturers, and all our products and elements conform to the Danish Window Certification standard (DVC).
Our production is based on good craftsmanship and state-of-the-art technology. The result is quality products which, with normal maintenance, will last for many years.

Contents

Reception and storage

Correct installation and maintenance is important to ensure full warranty coverage.

To ensure that the windows and doors function and operate optimally, it is important that they are installed correctly. Incorrect installation may result in product failure which is not covered by the warranty.
If you have any questions regarding the installation of the elements, please call our Technical Department on tel. **01582 860 940. They will be happy to help you.**

When unloading and handling the elements, use tools and methods which do not damage the elements.

Upon receipt, the purchaser must check that the consignment complies with the agreement and that the elements are free from apparent defects, faults or transportation damage. If there is any cause for complaint, please notify Idealcombi's Technical Department on tel. **01582 860 940 before installing the elements.**

Stickers and cork chips on window glass and other protective packaging must only be removed before installing the elements.

If stored outdoors, the elements must be placed on battens or pallets to keep them clear of the ground. The elements must be covered with a suitable and secure material to protect them from precipitation and dirt. Allow for sufficient ventilation around the elements in order to reduce the risk of condensation forming underneath the covering and excessive heat building up due to direct sunlight. Individual window elements should be stored under a roof structure, in a container or preferably inside.

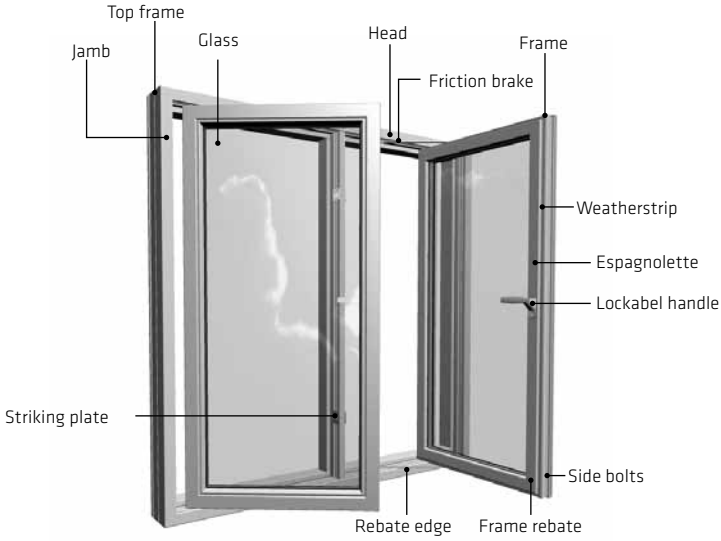
Our doors and windows are supplied with a small tin of paint in their particular colour and with this Installation manual. The paint is intended for repairing any minor damage caused during installation, but can also be used subsequently. Idealcombi's Technical Department is always willing to offer help and advice on surface treatment maintenance and on where to buy additional paint in a particular colour.

Complaints or requests for service in connection with failure or defects which are the result of inadequate installation or lubrication are not covered by Idealcombi's warranty.

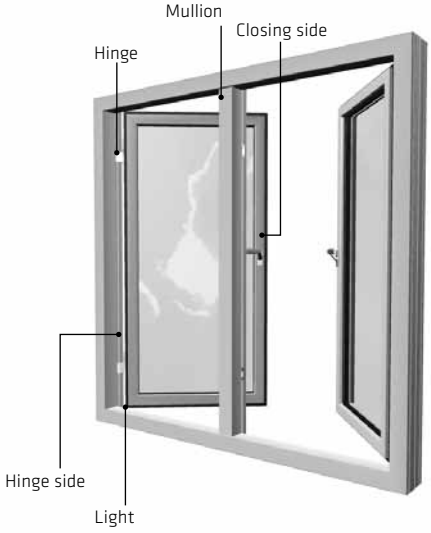
The construction of the window

To make it easier to understand the technical terms used in this Installation and user manual, the terms are shown on the two general drawings below.

Outside



Inside



Installation, general

Correct installation is important for the function and life of the elements. The installation should therefore be carried out by professional fitters of windows and external doors.

The instructions in this manual cover some of the main issues – and not every detail – which may be helpful in the installation process. The elements will normally be supplied with glass, but for large "fixed" frames or large combined elements glass will often have to be added after the elements have been installed. Such mounting of glass should be made in accordance with the installation guide provided by the Danish Industry Co-operative Organisation (GS). The installation guide can be ordered by calling Idealcombi's technical department on 01582 860 940.

Never use permanent support near the frame head of wide elements such as doors, as the overlying construction may weigh down on the elements.

Installation, general
The frame is usually placed in the aperture on the outer leaf of the construction. Please ensure uniform sealant gap width at the sideframe and frame head, and make sure the sill is level with the external sill/floor.

The distance (gap for subsequent sealing) between the frame and the surrounding "masonry" should normally be approx. 10-15 mm.

In the hinge side of the frame must be in plumb on both the wide and the narrow side. The frame must also be adjusted and fastened to ensure the correct closing position and space between sash and frame.

Securing, general
Windows and external doors should always be secured to the surrounding building parts with "mechanical means" such as framebolts/dowels or ironmongery.

Never use the windows / external doors as structural supports for any part of the building.

If any foaming material is used to fill the gap between the outer frame surface and the surrounding brickwork, the element must still be secured to the surrounding building parts with mechanical means such as frame bolts/dowels or ironmongery.

Without permanent support

If the frame is fixed in the wall aperture using mechanical means at each fixing point, the frame can be secured without the use of permanent support.

However, permanent support/wedging must always be in place under sideframes and mullions to ensure that the weight of the element is supported by the underlying brickwork/construction. The wedging material must be moisture-resistant.

Max. dimensions:

Max. Dimensions should be 150 mm from each corner and then at 450 mm to a max of 600 mm centres – cf Fig. 1.

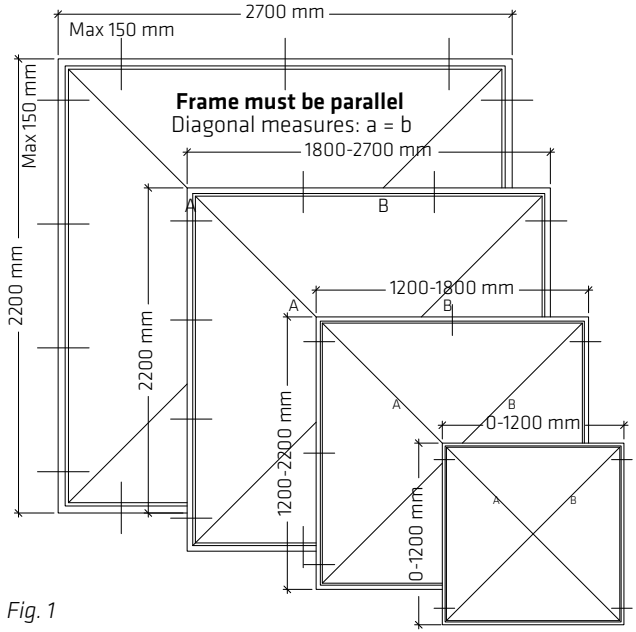


Fig. 1

Installation, general

Securing, especially for windows
Always use permanent wedging below theouter ends of the sill and mullions – *Fig. 2*. The wedge material must be moistureresistant.

Securing, especially for doors
Place the top and bottom fastening device inthe hinge side of the door in the rebate as closeto the hinges as possible, since the weight ofthe entire door is centred here – *Fig. 3*

Always use permanent wedging underneath theouter ends of the sill and mullions. For wide doors we recommend permanent wedging at the centre of the bottom of the sill – *Fig. 4.*

For 2-leaf doors, with or without centre mullion,place permanent wedging under the mullion/wing joint underneath the sill – *Fig. 4*. The wedging material must be moistureresistant.

In the closing side there must be permanentsupport behind the striking plate – *Fig. 4*. Themain function of this support is to prevent burglaries.

Fig. 2

Fig. 3

Fig. 4

Window installation

Place the element in the window aperture of the construction and wedge it up underneath the sideframes and mullions, if any. The sill should be horizontal and level. It must not under any circumstances curve upwards or downwards.

Adjust the sideframes so they are in plumb on both the wide and the narrow side. Opening sashes should have suitable clearance and close properly against the frame rebate. Secure the element with suitable frame bolts or ironmongery. It is possible to use frame bolts intended for installation with or without permanent support as long as the sideframes are parallel and do not curve inwards as this will make operation difficult.

When the installation is complete remove the dust from the frame and ironmongery. Lubricate all closing points and joints for smooth and permanent operation. We recommend brushing the weatherstrips with a silicone stick.

Door installation

The elements should be placed in the door cavity and wedged up underneath the sideframes and mullions, if any. The sill should be horizontal and level. It must not under any circumstances curve upwards or downwards.

Adjust the hinge side so it is in plumb on both the wide and the narrow side. The hinge side is then secured with suitable frame bolts with permanent support.

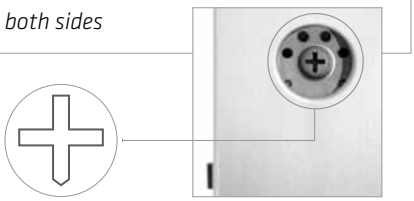
On doors, the fixings in the hinge side must be placed in the rebate as close to the hinges as possible, as the entire weight of the door is centred here. We recommend this solution if possible – if not, securing with suitable ironmongery will be necessary.

During installation, the gap, i.e. the space between the frame and sash, should be adapted to the function of the element. The closing side must be adjusted so that it fits the frame and provides full closure.

When installing double doors it is important that the doors close fully in the centre joint and that the two door plates are flush. The frame head must not curve downwards!

When the frame has been adjusted, secure the rest of the elements with suitable frame bolts with permanent support.

Cylinder | catch installation!
Be aware that when installing the cylinder in the door, the arrow is facing downwards on both sides



Sideframes and head and sill on double doors must be parallel and must not curve inwards, as this will make operation difficult.

When the installation is complete, remove the dust from the frame and ironmongery. Lubricate all closing points and joints for smooth and permanent function. We recommend brushing the weatherstrips with a silicone stick.

Fixing should be with permanent support, and an additional permanent support should be placed behind the striking plate in order to prevent burglaries. Always install extra permanent supports below hardwood and aluminium sills.

General

The sealing work (caulking sealants) must be carried out in accordance with current standards.

When stuffing the insulation material into the gaps make sure not to add too much as this will cause the frame parts to curve.

If any foaming insulation material is used, the frame must be reinforced or in some other way secured until the foaming process is finished completely.

Always finish off with a protective cover on the outside such as mastic, sealant tape or similar material.

Sealant type

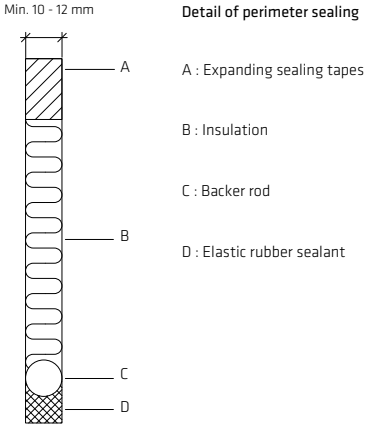
There are a wide range of sealing products tochoose from for use between frames and outer walls.

The two most common types are:

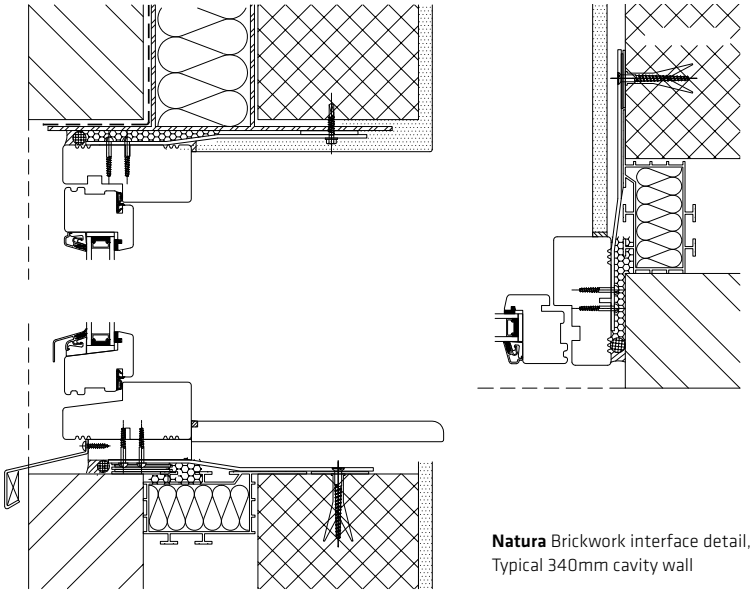
- Plastic or elastic mastic
- Asphalt saturated plastic foam *(Illmod sealing tape)*

In order to preserve the wood and keep heating consumption low it is important that the sealing work stays intact.

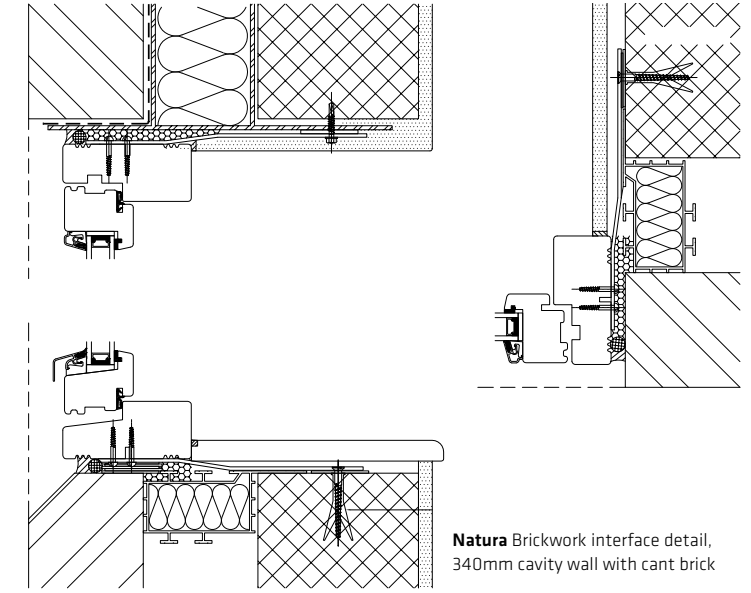
The sealing work should therefore be inspected at least once a year, and any leaks should be remedied using the same type of material as the existing one. In case of any major leaks, all the sealing material must be replaced. In such cases it must be assessed whether a different type of sealant would be more suitable than the existing one.



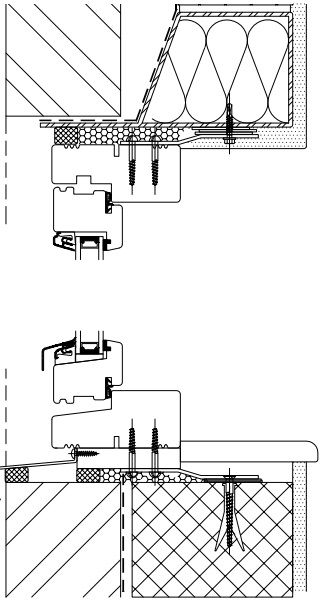
Installation details

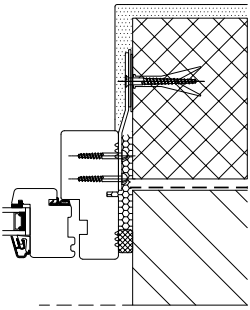


Natura Brickwork interface detail,
Typical 340mm cavity wall

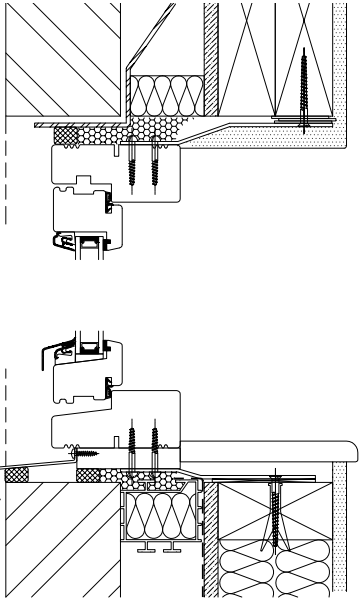


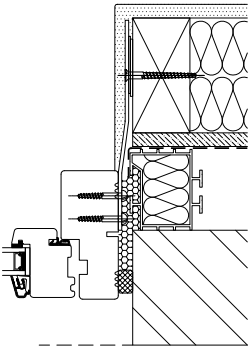
Natura Brickwork interface detail,
340mm cavity wall with cant brick





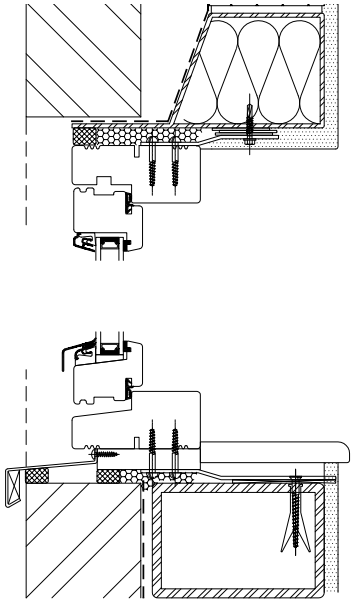
Natura Brickwork interface detail,
Timber frame with external brick

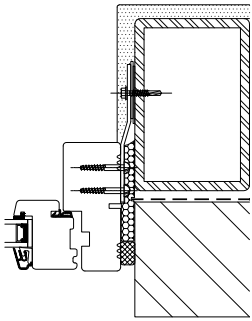




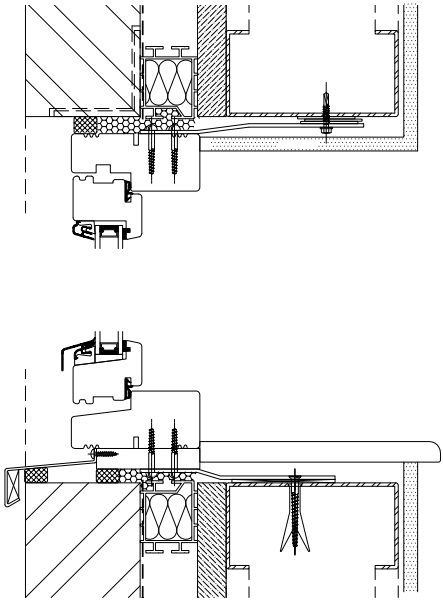
Natura Brickwork interface detail,
Typical 250mm cavity wall

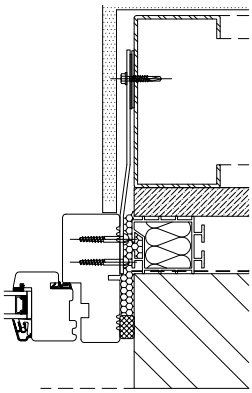
Installation details



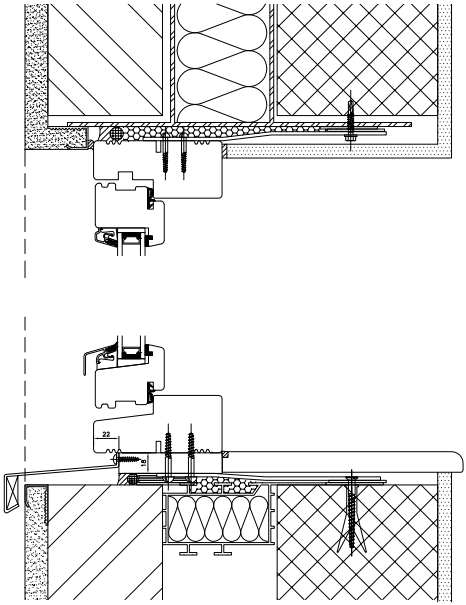


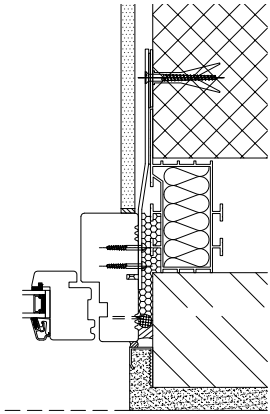
Natura Brickwork interface detail,
Hrs frame with external brick



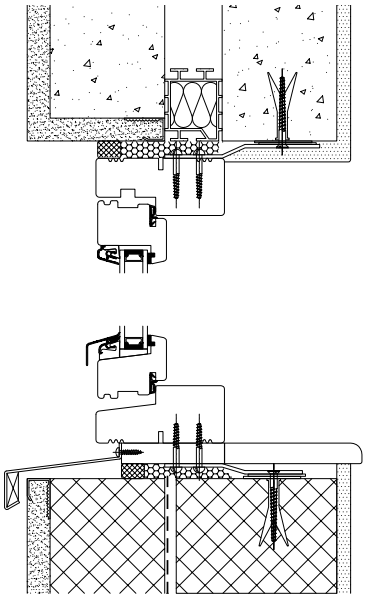


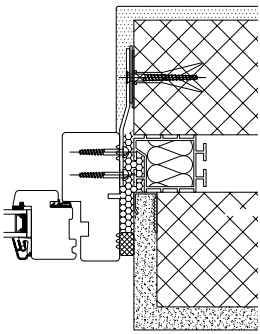
Natura Brickwork interface detail,
With internal steel stud framing





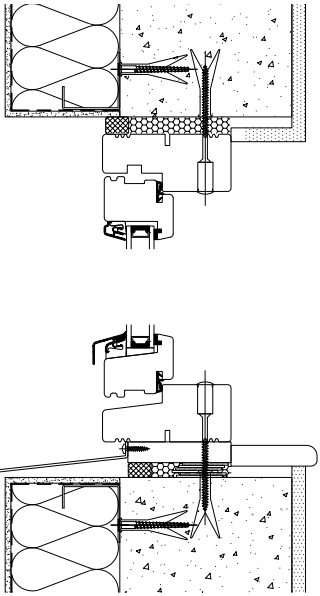
Natura Render interface detail,
Typical 340mm cavity wall

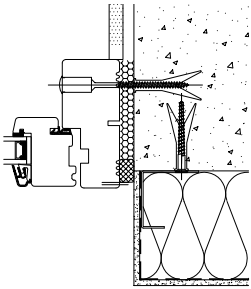




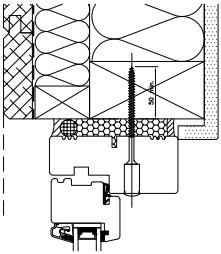
Natura Render interface detail,
Typical 250mm rebated cavity wall

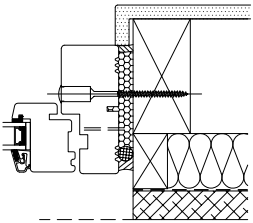
Installation details

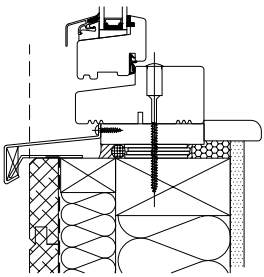




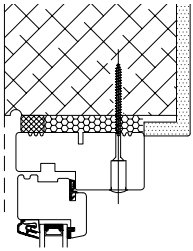
Natura Render interface detail,
Typical 250mm insulated render wall

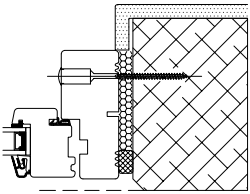


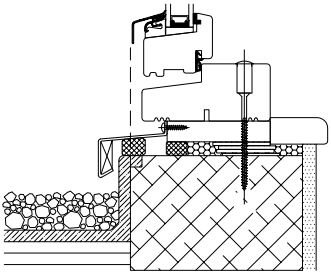




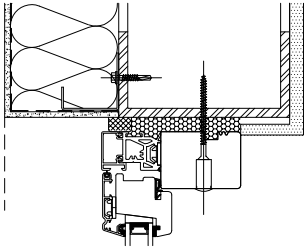
Natura Timber interface detail,
Timber stud wall with timber cladding

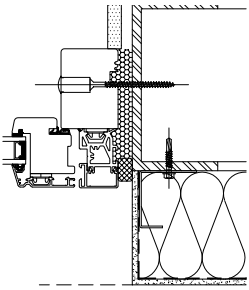


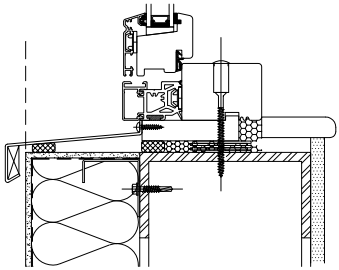




Natura Timber interface detail,
Timber frame with hardwood surround

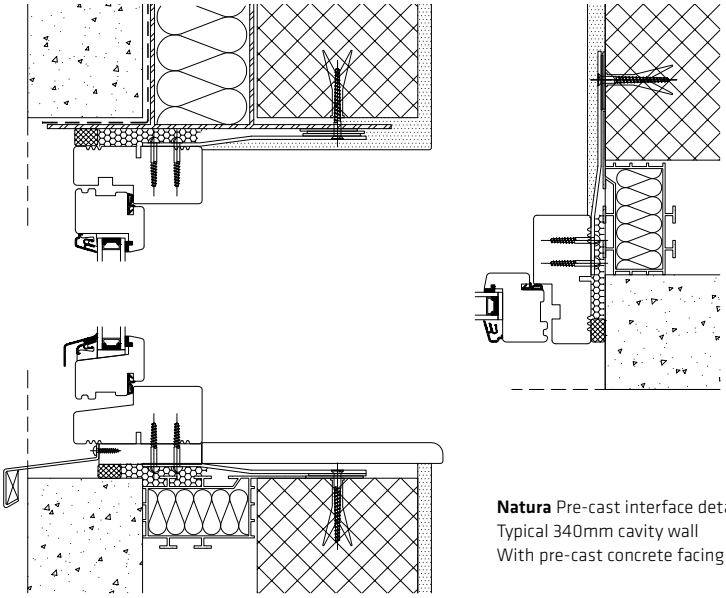




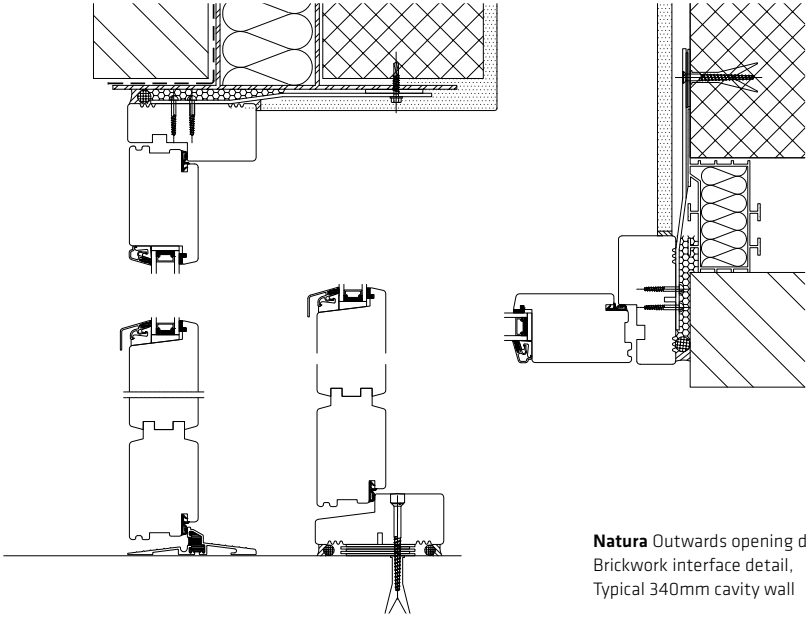


Natura Steel frame interface detail,
Steel frame with insulated render

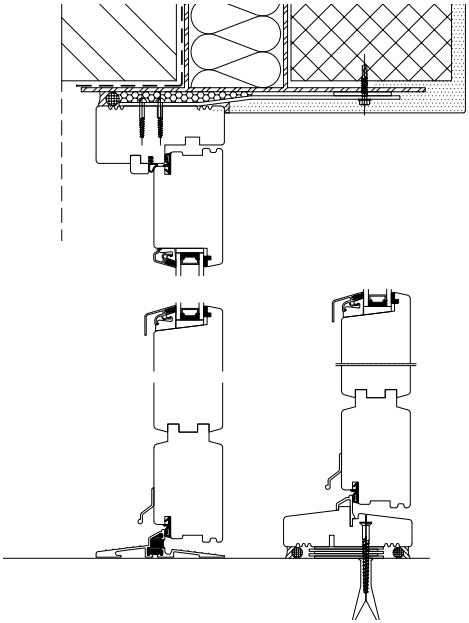
Installation details

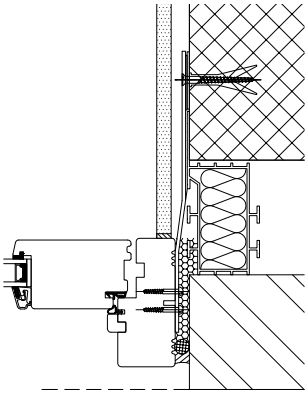


Natura Pre-cast interface detail,
Typical 340mm cavity wall
With pre-cast concrete facing



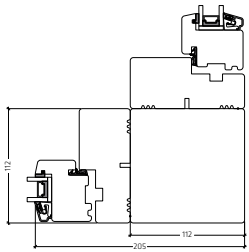
Natura Outwards opening door
Brickwork interface detail,
Typical 340mm cavity wall

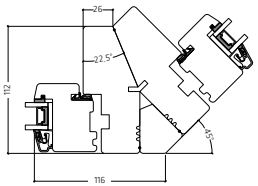




Natura Inwards opening door
Brickwork interface detail,
Typical 340mm cavity wall

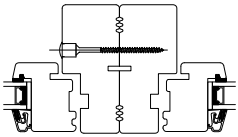
Natura Standard 90° corner

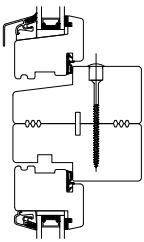




Natura Standard 45° corner

Natura Standard coupling mullion





Natura Standard coupling transom

Top guided

The window's top guided ironmongery is mounted in the top sides of the sash/frame. When the window is opened the lower part of the sash is pushed forward, while the top part of the sash moves down a little.

The window is operated by means of a handle which is placed at the centre of the bottom sash.

At the bottom there is an espagnolette which engages with the receiver on the frame when the sash is closed.

The receiver has two slots, the inner slot is for closing the window, while the outer slot produces a gap at the bottom of 10-20 mm for a night ventilation facility which can be securely locked in position.

The friction brake does not secure the sash's position during strong winds or draughts.

When the window is wide open, the sash is controlled by built-in friction in the top-guided ironmongery. The brake friction can be adjusted by tightening or loosening the friction bolt in the hinge slider – make sure that the friction is the same on both sides.

The friction brake does not secure the sash's position during strong winds or draughts.

Top swing reversible

Child-proof lock
The child-proof lock is placed in the right-handside when viewed from the inside. It is activated by lifting the safety arm off the stop while pulling the sash slightly inwards. The sash can now be opened while the safety arm is kept clear of the stop.

Top swing reversible
With the top-swing ironmongery, the window sash can be pushed out and turned around 170 degrees outside the frame. This makes it possible to clean the outside glass from the inside.

The sash is operated by a handle at the centre of the bottom sash which activates an espagnolette that engages with the receiver in the frame when the sash is closed.

The receiver has two slots, the inner slot is for closing the window, while the outer slot produces a gap at the bottom of 10-20 mm for a night ventilation facility which can be securely locked in position.

The top-swing ironmongery is equipped with an integrated child-proof lock blocking the sash when it is opened approx. 100 mm.

Further opening of the window is done by deactivating the child-proof lock, and the sash can now be turned 180° outside the façade of the house, so that the outside of the glass can be cleaned from the inside.

The frame can also be opened at a random angle, but then the frame is not secured in case of wind or draft.

Side hung

Side hung
The type of hinge may vary, but the function is the same for all types of pin hinges.

Operation with espagnolette
Our sidehung windows are supplied with espagnolettes and friction brake. The window is operated with a single handle in the sash's closing side which operates both the closing mechanism and the friction brake.

The friction brake in the bottom sash makes it possible to secure the sash in a random ventilation position from an opening of approx. 50 mm. The receiver has two slots, the inner slot is for closing the window, while the outer slot produces a gap at the bottom of 10-20 mm for a night ventilation facility which can be securely locked in position.

To secure the window in a ventilation position, turn the handle to a closed position while the window is open. This, however, does not apply to units with an IPA friction brake where the friction is adjusted by tightening or loosening the friction screw in the sliding rail.

IPA friction brakes are always mounted in the top sash.

Never open a side hung window for the purpose of airing the room unless it is secured by either a window stay or a safety catch. In case of strong winds or draughts, you cannot count on the ironmongery friction stays to keep the sash in a ventilation or open position.

The friction brake does not secure the sash's position during strong winds or draughts.

Side guided
Sash with built-in easy clean hinges.
This window allows cleaning from the inside.
The hinges are hidden in the rebate.

With side guided easy clean hinges, the sash can be opened up to 90° producing a gap of 150 mm at the back edge of the sash – just enough to reach out and clean the outside of the glass.

The sash is operated by means of a handle at the centre of the side sash. For operation with handle, the sash can be secured in a ventilation position by opening the sash 10-20 mm and pushing the handle downwards. For other opening angles, the sash is controlled by the friction in the ironmongery.

Entrancedoors

Entrance doors can be outward or inward opening. Entrance doors are available with glazings and spandrels or as flush doors.

Idealcombi's entrance doors are supplied with espagnolette lock and three closing points in the handle side. When the handle is pulled down, all three closing points are disengaged and the door can be opened. The bottom and top closing point is activated by lifting the handle upwards. The door can then be locked.

A three point closing system makes the door close tighter and this type of door locking system provides a better protection against burglary

Stable doors

The two door halves can be opened as one door when the handle on the lower door is turned to the opening position – before the handle on the upper door is operated. It is only possible to lock the door with a key when the handle on the upper door has been turned upward.

The door can be supplied with one-point closure.

The stable door can also be supplied as a terrace stable door without a key lock system. Operation: Please see under "terrace door".

Terrace doors
Terrace doors can be inward or outward opening doors, made as sash doors with glazing and panels.

A terrace door from IdealCombi comes with built-in three-point espagnolette lock in the handle side which is activated by turning the inside handle 90°.

Doors with friction brake can be locked in any random ventilation position from approx. 50 mm to wide open by turning the handle to its closed position. The friction stay cannot be expected to secure the door during strong winds or draughts.

2-leaved terrace doors only have one handle on the door that opens first. The other leaf is secured by two flush bolts, one at the top and one at the bottom, which are located in the rebate.

2-leaved terrace doors
2-leaved terrace doors only have one handle on the door that opens first. The other leaf is secured by two flush bolts, one at the top and one at the bottom, which are located in the rebate.

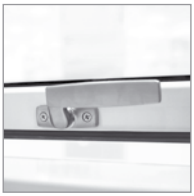
The friction brake does not secure the sash's position during strong winds or draughts.

Flush doors

Flush doors
The outward opening flush entrance door is used for direct access to the outside from, for example: a utility room, hall or porch in buildings where the outside areas permits this and is the preferred choice for fire exits with appropriate ironmongery. Outward opening flush doors are typically used as entrance doors.

Outward opening flush entrance doors are available with a smooth door leaf or with groves and/or vision panels in various shapes for glazing. Flush doors are available as single doors with or without side lights. Double doors are available with a French casement floating-mullion for maximum opening widths when required. The doors are side hung and are locked with a deadbolt, latch and multi-locking point hook bolt mechanism, which is operated by lever handles both internally and externally with lockable cylinders. A thumb turn may be chosen for the inside.

Friction brake
The brake is activated by turning the handle to locked position.



Nonlocking handle
Nonlocking handle in the sill that interlocks the hook bolts with the keeps.

Alternative handle

Never try to close the window when the friction brake is activated.

Adjustment of windows and doors

Windows

Top swing reversible | side guided

There is no actual adjustment device on top swing reversible windows or side guided windows. Therefore, they must be installed very carefully to ensure a suitable clearance for the ironmongery in the hinge sliders and guides.

Top guided | Top hung

On top guided windows and top hung windows, friction can be adjusted by adjusting the bolt in the hinge slider on the hinge. To ensure optimum functionality, it is important that friction is adjusted equally onboth sides.

Side hung

The hinges can be adjusted using a hinge adjustment tool if the sash sags a little.

Doors

There are no actual adjustment devices on doors. However, it is possible to adjust the hinges with a hinge adjustment tool in order to regulate the space between the frame and sash if the door sags upon installation. The door can also be adjusted so it presses harder on the weatherstrip in the closing side by adjusting the striking plate with a screwdriver.

Adjustable keeps

The adjustable keeps are mounted in a standard position from the factory. The first time the keep is adjusted break off the littel tap at the end of the adjustable plate and adjust the plate a little bit more to the side than necessary at the following adjustments. For general adjustment loosen the two screws in the adjustable plate and displace the plate forward or backward depending on whether the sill is too tight or too loose. The keeps are adjusted with bits torx 20.

Adjustable keep

Hook bolts

Maintenance, cleaning and lubrication

Maintenance, general

Windows and doors from Idealcombi require a minimum of maintenance. Under normal conditions, maintenance can be limited to regular cleaning of exterior surfaces with lukewarm water and a neutral cleaning agent to remove dirt from the surface. Apart from this, moveable ironmongery parts must be lubricated as required and at least once a year. Keeping hinge sliders, guides, weatherstrips, etc. free from dust and dirt will ensure smooth operation in years to come.

Cleaning, general

The outer sash and frame surfaces are affected by the surrounding environment such as city and industrial areas with high traffic intensity and air pollution and coastal areas with salty air which soil and affect the surface more than clean country air.

Cleaning should be done on a regular basis and at least twice a year, maybe in connection with window cleaning. Wash sash and frame surfaces in lukewarm water with a neutral cleaning fluid such as car shampoo and wipe surfaces and edges with a cloth.

Lubrication, general

It is important to lubricate and maintain all types of ironmongery to ensure easy and smooth operation and function of your windows and doors and to uphold the warranty on the elements.

Lubrication and maintenance frequency depend on the use and the effect weather conditions, pollution, etc. have on the ironmongery.

We know from experience that ironmongery used in for instance city and industrial areas, areas with high traffic intensity and coastal areas with salty air should be lubricated and maintained more often than ironmongery in a less harsh environment.

Important

All ironmongery is lubricated at the factory. But we would like to stress that the person/contractor responsible for the installation must ensure that all moveable parts, with the exception of friction parts/hinge sliders, are lubricated with a suitable lubricant before they are delivered to the client.

Generally, all moveable parts on hinges and closing/locking ironmongery should be lubricated as required, however, at least once a year.

General information about stainless steel handles and fittings

As standard, our stainless steel handles and fittings are made in matte brushed AISI 304 stainless steel which is well suited for modern construction work and provides optimum corrosion protection. Our products can be used everywhere for indoor and outdoor mounting and contribute optimum function and quality.

Material and surface
Stainless steel is extremely suited for applications with requirements for high wear resistance, excellent hygiene and good corrosion resistance.
Stainless steel forms a thin, protective surface oxide film which provides for a dense, durable surface with high mechanical load resistance.

Despite containing e.g. nickel, stainless steel is considered to be a non-allergenic material when used for door handles, fittings etc. A number of sub-components may be made from other materials, such as polymer, brass or aluminium, all of which have been used with due consideration to the optimum function, manufacture and durability of the product.

Cleaning and maintenance
Regularly check the function and mounting of fittings, retighten any loose fixings and clean product surfaces. In areas and environments with elevated impact from sulphur and nitrogen oxides, and in coastal environments with chloride condensation, the protective oxide layer on stainless steel may corrode, oxidising the surface and possibly forming reddish brown stains that resemble rust formations. However, this corrosion is only superficial.

The discolorations can easily be prevented or removed through normal surface cleaning.

Use hot water, mild detergent, soft brushes or synthetic sponges for cleaning. In special cases, you may use custom-made polish for stainless steel. Never use scouring pads, steel sponges or steel brushes as these may damage the surface!
The product is only covered by warranty if correctly mounted and maintained.

Environment
If used alone, stainless steel emits no hazardous vapours or metals. Generally, stainless steel is not classified as environmentally dangerous waste, but because the material contains heavy metals, the products must be disposed of according to the regulations for industrial iron/metal waste, which ensures optimum sorting and recirculation.

Specific lubrication instructions

Side hung hinges
Hinges on side hung windows and doors should be lubricated with acid-free oil during repeated activation. We recommend lubrication with acid-free grease. It will, however, be necessary to lift the sash off the tenons and apply the grease directly onto the tenons.

Top guided, side swing reversible and side hung
These are all hinge systems, and all joints must be lubricated during repeated activation so that the lubricant reaches the moveable arms. The joints should be lubricated on the outside and in the crack between the arms. Use an easily penetrating acid-free oil followed by a long-lasting acid-free grease in spray form.

Sliding surfaces, hinge sliders and sliding blocks should be maintained in a clean state to facilitate sliding.

It is possible to apply stearin or a dry lubrication product on the sliding surfaces to facilitate friction. Never use oil on these surfaces as it binds dust and dirt to the surface.

Sliding surfaces
All sliding surfaces are made from anodised aluminium and must be cleaned regularly depending on climatic conditions and the degree of air pollution. We recommend that the surface is wiped with a cloth or sponge. Never use emery cloth, steel wool, soda or other cleaning or abrasive agents containing alkali or acid on these surfaces. Only use neutral cleaning fluids such as car shampoo.

Espagnolettes and espagnolettes with roller cams

Espagnolettes should be lubricated with acidfree oil in spray form in the lock case and at rollers, side bolts and on striking plates or receivers. Lubrication must be made during repeated activation.

Friction brakes
Friction brakes are not normally lubricated, but always make sure the hinge slider is clean. If necessary, a handle activated brake connected to the espagnolettes on side-hung windows and terrace doors can be lubricated with a dry lubrication product.

Lubrication tools
Lubrication can be made with an oil can, a syringe or a spray can with a thin pipe. For further advice on lubrication, please call Idealcombi's Technical Department on tel. 0 1582 860 940

Inspection of weatherstrips and glazing gaskets
The condition of weather strips and glazing gaskets should be inspected concurrently with the annual lubrication.

Weatherstrips
Our weatherstrips are made from EPDM rubbers and several of them in a combination with a solid foot and a soft cellular sealing surface.

The weatherstrips do not require any special maintenance but should be kept clean and free of dirt. This is done by wiping them off once a year with lukewarm water and a neutral cleaning fluid using a cloth. We recommend brushing the weatherstrips with a silicone stick to minimize friction during operation.

Also check that the weather strips are positioned and secured correctly and that they have maintained their sealing function.

All weatherstrips are loosely mounted in a perimeter groove making them easy to removing and installing on most element types if they are damaged and need replacement – or in connection with surface treatment maintenance.

Never paint weatherstrips or brush them with wood preservatives/oils..

Glazing gaskets

Our glazing gaskets are made of EPDM/ cellular rubber and require no special maintenance other than being kept clean and free of dirt as described under weatherstrips.
Also check that the positioning and compression of the glazing gaskets still ensure tightness. Check whether the corner joints are completely tight to avoid unnecessary penetration of water.

The easiest way to control the tightness of the glazing gaskets is by means of a thin feeler gauge which must be met with resistance when inserted between the glazing surface and the glazing gasket.

For further advice, please call Idealcombi's Technical Department on tel.
0 1582 860 940.

General facts about surface treatments on wood profiles

Resin lumps and discolouration from knots

All wood profiles from Idealcombi are quality optimised, finger jointed/laminated ensuring elimination of at least 95% of all knots, star shakes and other defects. This gives the wood profiles greater stability and significantly reduces problems such as knot discoloration, yellow blotches and resin lumps in the surface treatment.

Please bear in mind that wood is a natural material, and as such resin lumps may form underneath the paint and discoloration from the wood treatment may occur – even with the best surface treatment.

Small droplets of resin penetrating the paint can easily be removed with rubbing alcohol. If small lumps of resin form underneath the paint, leave them for 2-3 years or until the resin has penetrated the surface treatment, then remove them with rubbing alcohol or, in more serious cases, scrape and sandpaper them away before applying new paint. Yellow discoloration, which can normally be removed with rubbing alcohol, often occurs on light colour finishes.

The above mentioned problems are often more pronounced during hot summers (tropic climates) and may occur rapidly particularly on facades facing south.

For further information please see Danish Window Certification appendix 14, page 38 of the technical regulations which deal with "Expected outcome of industrially surface treated timber elements".

Maintenance of surface treatment – Timber

When cleaning the wooden parts with lukewarm water and a neutral cleaning fluid, check for any damage or wear to the surface treatment.

If a degraded surface treatment needs restoration, we recommend the following procedure:

Cleaning
Thorough preparatory work is decisive for the durability and adhesion of the treatment. First, wash thoroughly with water and ammonia or a strong cleaning agent (not dish soap). Scrape off loose paint and remove any resin with rubbing alcohol.

Priming
Exposed wood facing the outside environment must be primed with a clear wood preservative or priming oil. When dry, sand all surfaces and edges lightly with sandpaper and remove the dust with a brush or cloth.

Finish
Finish with two coats of paint of the desired colour. We recommend that you use the same water-dilutable product as the elements were originally treated with. See the nearest dealer above.

Piece of advice
- Always read the instructions on the paint thoroughly before you begin painting
- All surfaces and rebates must be dry and free of dirt before you begin
- Weatherstrips and movable parts of hinges and handles should not be painted. Please note that the weatherstrip is mounted loosely in a groove, making it easy to remove before you paint and to remount when the paint is dry
- DVC's guarantee label must not be painted
- Use masking tape to facilitate painting along edges
- Always use a good brush with a proper width.
- Always paint wet in wet to avoid overlaps.
- Always have a cloth and plastic bag at hand. Use the cloth to dry off incorrect strokes and drips from the brush. Use the plastic bag to wrap around your brush if your work is interrupted for a short period of time
- Remember that hinged sashes must not be closed before the paint is completely dry.

We advise you not to use pure plastic paints as the weatherstrips between frame and sash may contain synthetic rubbers, which have a tendency to stick to such surfaces.

Expected outcome of industrially surface treated timber elements
Manufacturers associated with DVC use surface treatment on wood elements which, as a minimum, provide the following results:

	Expected result	Function class	Comments
Visible surfaces of closed elements	DLG**	III	Mean value of coating thickness > 60 mm (80 mm)
Visible surfaces of open elements	DG**	III	The surface must be non-absorbent
Non-visible surfaces (against wall)			No requirements

References:	Examples:
*Function class III 	Parts of buildings facing south or west, affected by varying levels of humidity, pollution from traffic or other aggressive impacts. See also supplementary description of outcome.
**Coverd, closed and smooth surface (DLG) 	Surfaces, edges and rebatesare of a uniform colour andgloss and feel smooth tothe touch. Rough spots originatingfrom the base may occur. Pores, holes, cracks and joints are closed, but not necessarily filled out.
*** Covered and smooth surface (DG)	Surfaces, edges and rebates are of a uniform colour and gloss and feel smooth to the touch. Rough spots, open pores, holes, cracks and joints originating from the base may occur.

All surfaces have been treated, but a uniformcoating thickness cannot be expected.

Supplementary description of outcome
Wood is a natural material and therefore often very heterogeneous. Variations in structure and gloss, star shakes and other variations are normal such as irregularities around knots where partial peeling, blistering and wrinkling may occur. Discolouration from knots may occur, especially on light colour finishes. Knots may be plugged or filled with a suitable filler, but they will always be visible.

Other colour variations such as yellow lines/surfaces may occur. Other irregularities such as lumps of resin may also appear in the surface treatment. The lumps may be randomly spread out or situated along the wood grains. The resin may also penetrate the coating and form little droplets on the surface. After a while, when the droplets have crystallised on the surface, they can be lightly brushed or scraped off without damaging the surface treatment.

Wood elements with a high content of resin may occur. In such cases, larger quantities of resin may seep through. Production is carried out industrially providing benefits such as uniform, high quality and treatment of all surfaces.

If nothing else has been agreed, glazing beads, etc. have been mounted using a nail gun which means that the surface treatment has been penetrated. For further advice on maintenance, please consult the paint manufacturer.

! For facades facing south that are exposed to strong sunlight and sea air or moisture from inside the building maintenance intervals should be adapted to the conditions.

Internal condensation of double glazing units

Double glazing units may be subject to interior condensation which is determined by:

- The moisture produced by human activity in the house
- Heating of the room
- Ventilation conditions.

If condensed water from a double glazing unit runs into the sash/frame construction it may lead to the formation of mould fungus or, at worst, decay fungus on the wood. There are a number of things/conditions which may cause condensation in the house. Notice especially the following:

- That new windows are considerably more airtight than old ones. When new windows have been installed, the house will need more ventilation than before
- That newly-built houses must be ventilated more often than old ones. It may take more than a year to dry a new house properly. This is also the case when additions have been made or the house has been renovated
- That an adult person – or a medium-sized dog – releases approx. 2 litres of water per day
- That cooking, bathing, laundering and drying from two adults and two children can easily produce 3-5 litres of water per day
- The problem with humidity increase when the room temperature is lowered and decrease when the room temperature is raised. Even lowering of the temperature for a short period of time (e.g. at night) can cause the formation of condensed water on the glass.
- That heavy curtains and broad window boards/frames can make the air stagnate at the glass causing cold and moist air to form condensate on the glass
- That insufficient ventilation causes a bad indoor climate which may lead to coughing, headaches, smarting eyes, rashes and respiratory allergies.
- That a house which has been subject to a high level of humidity for a period of 8 to 14 days should be ventilated thoroughly. This is done by having 2-3 windows open in their ventilation position day and night and, at the same time, raising the temperature 4-5° C above normal for 8 to 10 days. You can also leave your range hood on in the kitchen day and night
- That on days with calm, sunny weather, the sun will supply more free heat than the heat that disappears during normal ventilation
- That it is a balancing act to find the perfect equilibrium between saving energy and minimising humidity problems.

External condensation of double glazing units

It is not until in recent years, that we have seen the problem with exterior condensation (dew) on low-energy units. The problem arises when emissions to the atmosphere causes the temperature on the exterior layer of glass to become lower than the exterior air's dew-point temperature.

This typically occurs in periods when the relative air humidity is near 100%. Exterior condensation of low-energy units typically occurs in the months of autumn and spring, usually at night and in the morning, until the condensation is removed by sun and air. The problem can be especially noticeable during the months of April and September. The problem with exterior condensation is usually the result of energy saving units having a very low U-value.

The primary reason is that the heat transfer from the interior to the exterior side of the glazing unit is so low that the temperature of the exterior surface becomes lower than that of ordinary double glazing units. As standard, IdealCombi A/S uses energy class A glass with low emission coating and a U-value of 1.2 You cannot prevent the physical phenomenon "exterior condensation", but you can make some safety precautions to reduce the extent and inconveniences of it.

Thermal rupture of double glazing units
When constructing windows and mounting the double glazing units in the sash, Idealcombi A/S makes allowance for the glass to "work" as a natural part of temperature fluctuations. If a double glazing unit is exposed to uneven heat exposure it may cause thermal rupture of the glass. Uneven heat exposure can be caused by e.g. deep shadows, adhesion of (especially dark coloured) streamers, posters or signs, painting of the glass or parts of it, or adhesion of plastic foil or sun filters.

It can also be caused by placing heat-reflecting materials close to the glass or if heavy curtains, blinds or large plants obstruct proper, even heating of the glass. Under such conditions, double glazing units may absorb so much solar energy that tensions in the glass can cause a very characteristic rupture.

To avoid thermal rupture under such conditions it is necessary to use pre-stressed glass for the double glazing unit. Defects caused by the above-mentioned conditions are not covered by the warranty of the glass supplier and Idealcombi A/S.

Warm edge
Warm edge is a thermoplastic spacer that minimises the thermal bridge at the edge of the pane, thereby contributing directly to reducing the window's total heat loss. This is not only good for the environment and your heating bill, it also increases the temperature along the edge of the pane, thereby reducing the risk of internal condensation forming in the rim zone. Idealcombi uses warm edge as standard on all units and the dark spacer gives the window an attractive and harmonious look.

1. WINDOWS AND DOORS

1 This warranty is given by Idealcombi A/S. It does not in any way restrict or change any of the rights you may otherwise have vis-à-vis your supplier/contractor or Idealcombi A/S as provided by a contract or general legislation.

2 If you, within a period of 5 years from Ideal-Combi's time of delivery, complain about any defects in manufacture or materials, this warranty shall give you the rights described in item 3 against Idealcombi A/S. The time of manufacture will appear from the label on the product. If requested, you will be responsible for providing documentation for the time of delivery.

3 Provided that you make a legitimate complaint about defects in manufacture or materials within the period mentioned under tem 2, Idealcombi A/S shall be obliged to repair the defect or, if necessary, supply a new product at its own expense. Idealcombi A/S does not, however, under this warranty cover the costs of removing and installing, just as any subsequent works arising from such replacement of a product are not covered by this warranty. If the product is no longer in production when the complaint is made, Idealcombi A/S shall be entitled to supply another similar product instead. If a defect in manufacture or materials can be properly corrected by repair/partial replacement, Idealcombi A/S may choose this solution instead. In such case the repair work/partial replacement will be made at the expense of Idealcombi A/S.

4 This warranty does not give you any rights other than those described under item 3.

5 If you wish to complain about defects in manufacture or materials, the complaint must be made within a reasonable period of time after the defect has been or should have been detected. Complaints can be made to Idealcombi A/S or to the contractor/dealer who has supplied the product.

6 This warranty does not apply in case the claimed defects in manufacture or materials are caused by faulty installation, missing or insufficient maintenance or faulty operation. Please see Idealcombi's Installation and user manual. As regards the window's wood components, which have received surface treatment at the factory, please take special notice of the Installation and user manual and "Expected outcome of surface-treated wood components" (Appendix 14 of the technical regulations of The Danish Window Manufacturers' Association. You can order the regulations from Idealcombi A/S). It is important that the exterior window surfaces are washed twice a year to keep the properties of the surface-treatment. If you did not receive an Installation and user manual along with your consignment, you can order one from Idealcombi A/S.

7 This warranty does not cover defects which are the result of circumstances other than normal application and use. Idealcombi A/S is not liable under this warranty for defects which are caused by faulty storage, transportation, installation, etc. by a dealer/contractor.

8 This guarantee applies solely to products purchased and installed in England, Wales, Scotland, Ireland, Isle of Man, Orkney and Shetland Isles, Channel Isles and Iceland.

2. DOUBLE GLAZING UNITS

For a period of 10 years calculated from the time of manufacturing (as stamped into the unit), Idealcombi A/S warrants that double glazing units mounted in doors/windows remain free of dust and mist inside the units. The warranty shall apply on the condition that:

- The unit is mounted at the factory or by one of Idealcombi's fitters
- The time of manufacture (month and year) appears from the unit's spacer bar
- The unit has been properly cleaned and protected during the construction period
- The glass has not been damaged on the outside by e.g. bumps, impacts, movemenments of adjacent constructions and the like
- There are no defects caused by frost bursts, other thermal impacts or chemical impacts on the glass
- The unit has not been subject to subsequent treatment upon delivery such as sanding, sandblasting, etching, painting,

  affixing or other forms of surface treatment
- Sash and frame have been subject to proper, regular maintenance

3. ELECTRICAL EQUIPMENT

A 1-year warranty is granted for all electrical equipment.

VINDUES INDUSTRIEN

The Association of Danish Window Manufacturers

Idealcombi A/S is a member of the Association of Danish Window Manufacturers Founded in 1977, the Association of Danish Window Manufacturers is the trade organisation of approx. 65 Danish manufacturers of windows and doors.

Its general purpose is to safeguard the interests of the window and door manufacturing business, but it also gives high priority to consumer safety in connection with window and external door purchases.

Another essential function of the Association of Danish Window Manufacturers is the technical regulations which form the basis for quality control procedures carried out in pursuance of the Danish Window Certification body, DVC.

The technical regulations ensure the best possible conditions for the manufacture of windows and external doors both when it comes to function, life and focus on energy and environmental issues.

For further information, please visit the Association of Danish Window Manufacturers website at: www.vinduesindustrien.dk

Dansk Vindues Certificering

Danish Window Certification

All Idealcombi A/S' products are DVC-labelled.

All the Association of Danish Window Manufacturers members are associated with Danish Window Certification, the Association of Danish Window Manufacturers. This means that the consumers are guaranteed windows or doors that have been quality inspected.

DVC is a fully independent certification body which is affiliated with the Danish Technological Institute. DVC affiliated manufacturers are subject to systematic control of their products and quality management systems twice a year. Under the DVC programme, the manufacturers are met with special requirements for quality assurance and management, product design, material quality and workmanship.

The Association of Danish Window Manufacturers circle of members consists of manufacturers of windows and exterior doors of wood, wood/aluminium, plastic and aluminium. Consumers can rely on all the Association of Danish Window Manufacturers member products to be DVC labelled.

For more information about DVC and the requirements made for DVC labelled products,please visit the website:
www.dvc-vinduer.dk

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Enhancing windows