Installation instructions Cintralux® Aluminium barrel vault :

10 mm PC1700

1. Introduction:

a. Upstand:

-Before installing of the barrel vault, the customer has to foresee a solid timber or metal upstand. This upstand must be undeformable (if necessary to be reinforced) The minimum height is 15 cm (against the finished roof). The upper side of the upstand is HORIZONTALLY and 6,5 cm thick. A metal upstand is min. 3 mm thick. Timber as well as metal upstands must resist the forces as described in our technical file. On roof coverings in plastic (PVC and others) with clamp profile at the height of the upstand, this profile must strictly close up on top of the upstand against the upstand over its full length and width (no play between the upstand and the clamp profile) Not one of the upstands may continue at the angle of the lateral side and the front side , i.e. that the upstand construction must be free around.

-If the upstand is in concrete, you have to previously anchor a timber strip of minimum 44 mm with appropriate galvanised screws. Make sure you cover the timber strip with the roof covering. Strictly respect the determined sizes.

b. Sizes:

-Since the barrel vault is made to size, sizes cannot be changed after ordering. Therefore the overall size (the outer size) of the upstand (roofing included) must be respected.

c. Glazing and shells:

-The glazing panels are only clamped to allow dilatation and extraction in function of temperature fluctuations. The system is conceived in a way that silicone and rubber sealings between the aluminium and the glazing are not necessary (even forbidden).

-All profiles and glazing panels (except the end panels and the end panel divisions) are cut to size, precurbed and foreseen with screw thread.

-Respect the exposed UV protected top side of the sheets (glazing).

-At first, apply the bolts always by hand before using a screwing machine to have two full rotations in the shells foreseen with screw thread. Otherwise you risk to damage the screw thread.

-Do not forget to remove the protection film of the sheets (glazing) after installation.

d. Sealings:

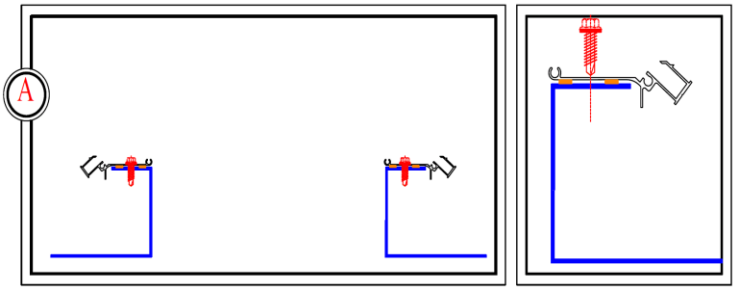
-When using roof covering, apply this correctly until it covers de upstand. It must be covered entirely up the daylight size. If the barrel vault is not detached and it approaches 1 or several walls, the connection must be vertically and smoot,. eg by using a lead flashing.

2. Control of the upstand:

Check previously the agreed correct sizes of the upstand (overall size – roofing included). Check if the upstands are parallel with each other. Check the right angles and make sure the top side is smooth and equal. Clean it if necessary before installation and remove sawing pieces, irregularities, etc...

3. Fixation butyl sealing:

Fix the delivered butyl sealing over the full outline of the upstand. Put two stripes next to each other at approximately 10 mm from the inner edge (in orange on drawing A). Make sure the ends of each strip overlap. Press firmly on the butyl sealing and remove the film.



drawing A

4. Installation of the end profile and lateral profile:

First install the end profile and then the lateral profiles. These come at the ends (Fig 1) always on top of the end profile. Make sure they are perfectly parallel in pairs and that the daylight size is the same everywhere. The lateral profiles for barrel vaults of > 4 m come in different parts and are packed per reference, with the alu strips. Fix the end profile with the delivered screws with neoprene sealing (Fig 2).

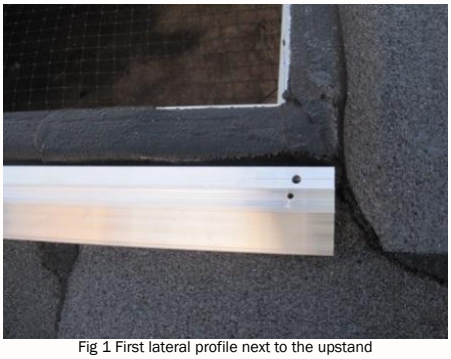


Fig 1 First lateral profile next to the upstand

Fig 2 Installation of the end profile on the upstand

Foresee a screw every 50 cm. Only use adapted screws (metal screws for metal upstand, timber screws for timber etc....) Tighten the screws so that the pinion connects perfectly to the profile. Fix the lateral profiles in the right order (scheme enclosed) and let a play of approximately 5 mm between the profiles. Seal the joints (Fig. 3 & 4).

Fig 3 & 4 Sealing end profile and joints

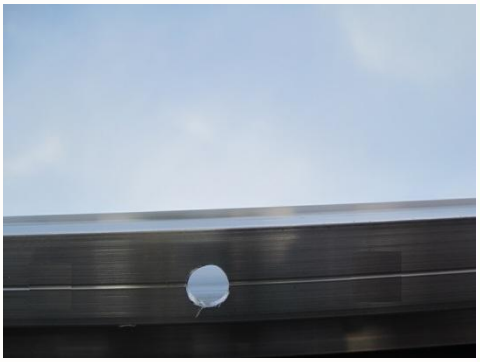


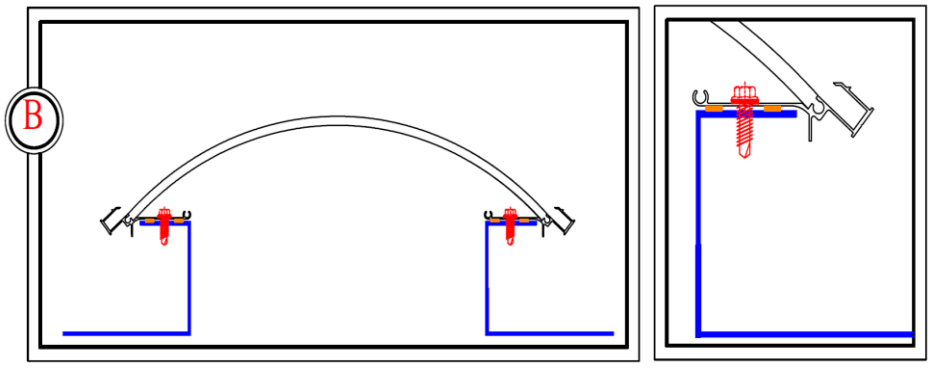
Fig 5 Predrilled opening

5. Installation of the under shells and sheets:

Fig 6 Gliding in the sheet into the lateral profile

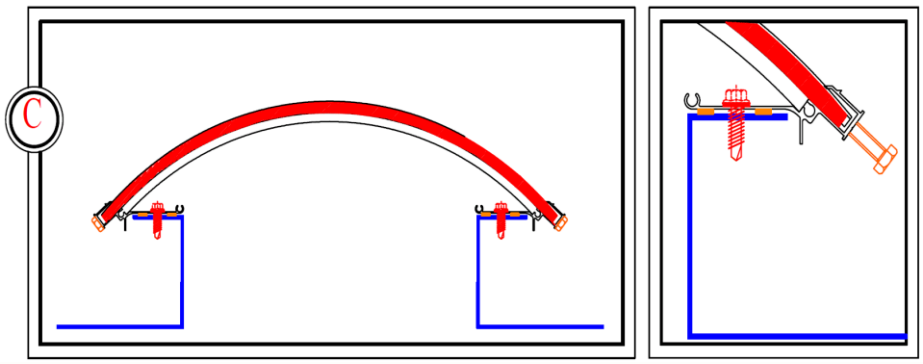
On small spans, the under shells are only "clamped". On large spans, the under shells are tightened in the lateral profile by means of a stainless steel bolt through the predrilled opening (Fig. 5). After that, install the sheets by gliding the sheets in the lateral profile at one side and bend them "cold" at the other side (Fig. 6 & 7). Install the sheet with the UV protected side to the outside. It is the side with the printed protection film (after having removed the protection film you will see a small print on the edge) Remove the protection film of the sheets just before installation of the sheet. Remove only 10 cm of the film at the top side.. Only remove the film after finishing the installation of the barrel vault, but definitely the same day.

Fig 7 Mount the sheet on the other side too.



Drawing B

6. Installation of the upper shells :



Drawing C

Install now the upper shells (Fig. 8). Make sure the bottom profiles in the middle of the bottom side of the upper shell fit in the notch of the bottom shell. Fix the upper shells by hand with the stainless steel bolts M6 or M8 (Fig. 9). Do not tight up yet and make sure you do not block everything as the alu strips must be installed and the shells must be able to "extend". Attention: another type of upper shell profile is used at the end panels (Fig. 10). First, you have to finish point 7.

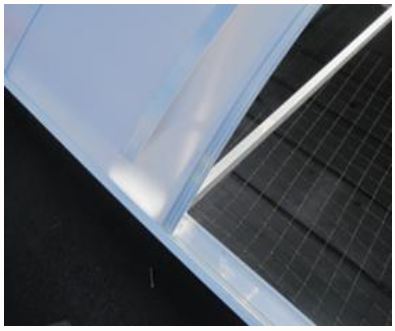


Fig 8 Mounted bottom shell with separate upper shell

Fig 9 Fixation upper shells

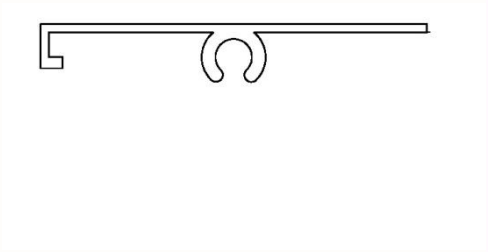


Fig 10 Upper shell at the edge of a fix element

7. Installation of the end panels:

If the end panel is composed of 2 elements, first cut the end panel divisions to size, attach the angle profiles (L profiles) (Fig 11) and screw the angle profiles at the bottom on the end profile and on top against the bottom shell. (Fig. 12). The bottom side of the panels, which must be cut to size, fit in the U profile of the slit of the end profile underneath. Present the sheet in this slit and draw the form to be cut out on the protection film with a marker (Fig. 13). Use a metal saw with new saw blade to cut out the sheet at approximately 2 cm of the marked off edge (Fig 14). Blow out the sheet and tape the sheets of with the delivered tape (Fig. 15). Put the sheet in the slit underneath the end profile and in the slit of the bottom shell. Screw the protection profile at the end panel division at approximately 10 cm of the extremities (Fig. 16). Install the centred shell with U-slit over the sheets and the bottom shell. Mount the upper shell and tighten it slightly (Fig. 17). Drawing D shows a cross section of the profiles. From the overall width of 3 m , there is 1 ridge reinforcement over the first 3 shells; from more than 3,5 m there are 2 ridge reinforcements.

Fig 11 End panel division

Fig 12 Fixation of end profile

Fig 13 Mark off the form of the sheets

Fig 14 Cut off the end panel sheets at approximately 1,5 cm from the outside

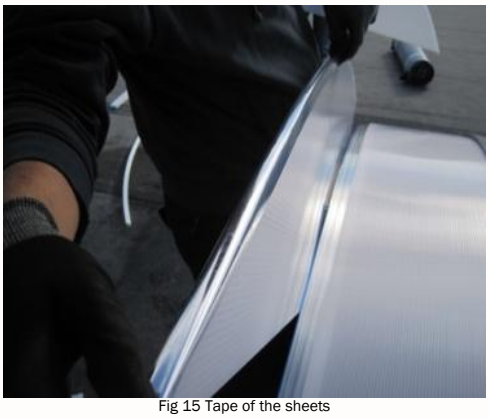
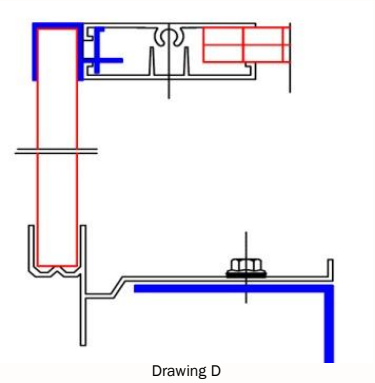


Fig 15 Tape of the sheets

Fig 16 Fix the profile

Fig 17 Mount the upper shells and tighten up



Drawing D

8. Finish with alu strips:
   Clip the alu strips between the shells at the point of the transition glazing panel / upper shell lateral profile. Start at one side, press and use a timber block or rubber hammer to get the alu strips in their position.

9. Tighten the bolts:
   Tighten the fixation bolts of all shells " manually". It is not necessary and we advise against tightening firmly.

10. Maintenance and use guidelines for Cintralux® Alu barrel vaults:
    a. Immediately after installation:
    If there is any work to be done with risk of dust parts (e.g. cutting, drilling, plaster works), we advise to hermetically close off the opening underneath the barrel vault with pvc foil. The dust could adhere to the plastic sheets and in worst case enter the split of the plastic glazing through the ventilation holes.

    b. Maintenance:
    Only clean the plastic sheets with tepid rain water and a soft sponge. You may add some non-aggressive cleaning product (no detergent) makes cleaning easier. Use an iso-propanol solution for tenacious spots (50% iso-propanol and 50% water). After cleaning, rinse with plenty of water and let dry. Do not rub dry (risk of scratches).

    c. Covering:
    Covering the barrel vault (eg for warmth reflexion) is only possible when the cloth does not contain any softening agents. We strictly advise against covering the acrylic or polycarbonate with a coating or paint. In that case, you cannot apply on guarantee. Please inform yourself at the supplier or producer of the coating or paint about the guarantee.

    d. Condensation:
    Acrylic and polycarbonate sheets are very less permeable to damp, which can cause condensation in the canals of the sheets. This could mostly happen at the beginning of the installation because there is a lot of construction liquid that must damp. This is a physical phenomenon and disappears after some time. The condensation has no influence on the characteristics of the plastic sheets or on the guarantee.

    e. Dilatation:
    Acrylic and polycarbonate sheets are plastic sheets and will dilatate and shrink in case of temperature fluctuations. The profile system allows this dilatation and shrinking. This could cause some noise, but will not influence the stability of the construction.

    f. In general :
    Damage or dirt of or on the barrel vault following polishing or plaster work and others by third parties, always are at the customer's expense. The barrel vaults resist normal wind and snow load. We can foresee aluminium reinforcement profiles with supplement in price (and only at customers' request).