JUAL Roof Console

PRODUCT DESCRIPTION

JUAL Roof Console for fixation

For effective and safe fixation of constructional elements or other types of installations on warm, cold or flat roof constructions equipped with a bituminous based roofing membrane, such as solar cells, antennas or others. The Roof Console can be applied on buildings with both an inclined or a flat roof as long as the specific type of roof construction is regarded.

APPLICATION

When an installation with Roof Consoles is planned the different forces that will impact on the specific console must be regarded and defined in order to reach an effective and reasonable installation. On the following page, under the heading SYSTEM DESIGN, the various load types have been illustrated.

MATERIAL:

Flange: Stainless steel
Connection interface: Stainless steel
Console Adapter: Galvanized steel
Membrane: Type of the integrated membrane can be specified for each specific project.

<table>
<thead>
<tr>
<th>Article number</th>
<th>Membrane overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>220060-xxx</td>
<td>220060-XXX</td>
</tr>
<tr>
<td>article number - membrane type</td>
<td></td>
</tr>
</tbody>
</table>

The membrane specification sheet can be found on www.jual.dk
TECHNICAL DATA

During the planning of installations with JUAL Roof Consoles it is important to ensure that the application of each individual console is effective and correct. Throughout the following points the different aspects which are relevant for a successful planning are presented.

BASICS:
The JUAL Roof Console has been tested by TÜV Rheinland in terms of both membrane integration (DS/EN1253) and load capacity.

<table>
<thead>
<tr>
<th>Roof Deck Type</th>
<th>Varm Roof</th>
<th>Cold Roof</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&lt;sub&gt;z&lt;/sub&gt;</td>
<td>350 Kg</td>
<td>350 Kg</td>
</tr>
<tr>
<td>F&lt;sub&gt;x&lt;/sub&gt;</td>
<td>* 250 Kg</td>
<td>* 250 Kg</td>
</tr>
<tr>
<td>F&lt;sub&gt;y&lt;/sub&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For further information about the specific anchors and their applicational conditions please refer to the Console Anchor data-sheet.

* See the section about HORIZONTAL FORCES

ROOF DECK TYPE

What is the roof deck type for the current project; is it a flat, cold – or warm roof construction or is it a building with an inclined roof.

The roof deck material and form for the Console installation should also be defined; is it a massive concrete deck or does it consist of precast concrete members, steel trapez sheets, wooden rafters or the like.

When the current project is about a warm roof construction the minimum and maximum insulation thickness should be determined. A roof with a said 350 mm insulation thickness could due to the establishment of drainage inclination easily have an insulation span ranging from 250 – 450 mm.

SYSTEM DESIGN

The type of load which will impact each specific console once the installation has been completed should be determined. Is it a force acting parallel or perpendicular in relation to the roof surface or is it a combination. The permissible forces in the respective impact directions have been listed in the following table.

When considering the various forces at play it is important that the constraining of the system is planned in such a way that there will be no resulting torque on the console. This can be ensured by designing the installation in a way where consoles are always interconnected. In this system design it is a precondition that all crosspoints are rigidly constrained. This precondition is also to be respected for the crosspoint between the installation profiles or system and the Connection Interface on the console.
HORIZONTAL FORCES

On warm roof installations where a horizontal load has been defined which must be constrained through out the application of a number of roof consoles, it is necessary that the overall load for each interconnected group of consoles is evaluated. Based upon this overall evaluation it is possible to determine the specific horizontal force which will impact each specific console. This result is checked up against the console load limit for the present installation.

For warm roof fixations the load limit is most often determined by the rigidity of the fixing element, which is directly related to the insulation thickness.

The design criteria for this type of installation is normally defined by the acceptable horizontal movement of the console in relation to the general roof surface. The relation between the load and the deflection for different insulation thicknesses for the JUAL Warm Roof Anchors is presented in the following diagram.

In this connection is should however be underlined that values presented in the diagram is based upon a rigid fixation of the actual fixing element into the roof deck. The deflection of an anchor in a trapez steel installation must be expected to deflect more radically compared to a fixture in a concrete deck.

LOAD CONSIDERATIONS

In the planning process of installations with Roof Consoles the specific wind related loads for the given project must be regarded in terms of; geographical location, landscape category, building type, etc.

For effective and cost efficient planning is it however also important to consider the specific load of each, or each group of consoles as the design load may vary quite radically through out the roof area. This approach will be especially relevant for larger installations.

In the appliance of roof consoles in connection with solar power plants the planning should also include considerations about the fire technical issues and it is recommended that this is agreed with the local authorities.