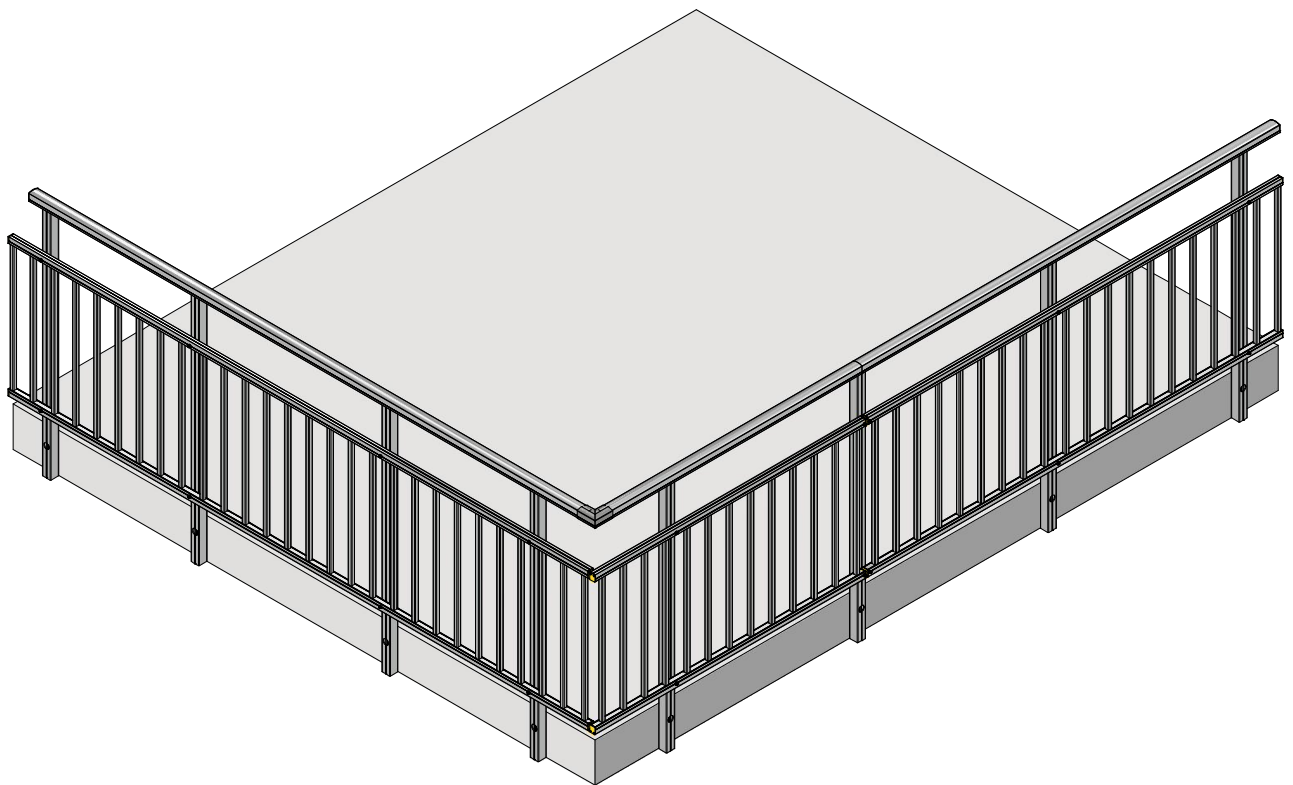


BALCONY RAILING

BODO  
SIDE  
MOUNTED

INSTALLATION MANUAL



# NECESSARY AND ADDITIONAL HELPFUL ITEMS FOR INSTALLATION:

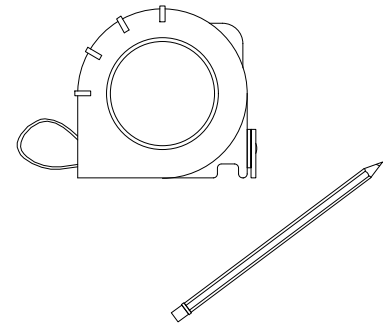
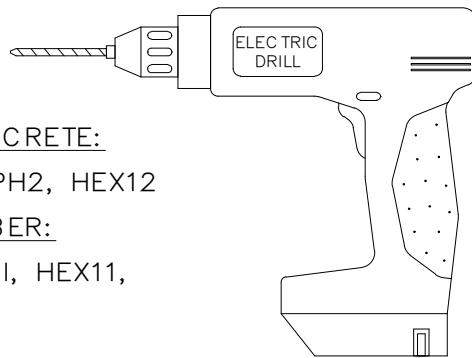
Drillbits for CONCRETE:

SDS plus M12, PH2, HEX12

Drillbits for TIMBER:

Ø6mm wood drill, HEX11,

TX50, PH2

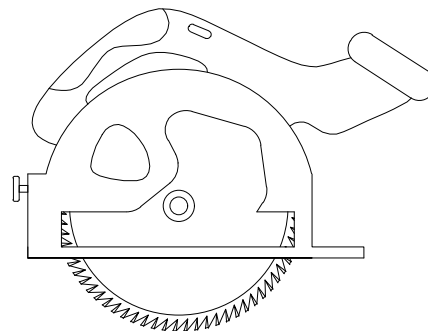


Electric drill for TIMBER  
Hammer drill for CONCRETE

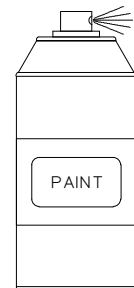
Measuring tape & pencil



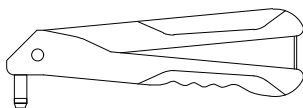
Soapy water spray  
(Optional)



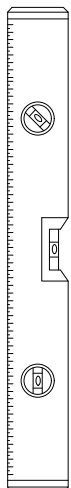
Angular saw  
cold cut



Repair paint  
(Optional)



Riveting pliers



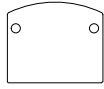
Level



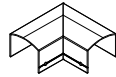
## CAUTION

- READ THE WHOLE INSTALLATION MANUAL BEFORE STARTING.
- Handle all parts with care – aluminium frames can bend or scratch easily.
- Railings are powder coated, paint can be damaged if profiles are left on uneven surfaces and not handled properly.
- Balcony railing installations have to follow the requirements set by a country's legislation. Innore takes no responsibility of damage and casualties that have occurred due to non-compliant installation.
- Do not install during windy weather conditions.
- Safety is number one priority when dealing with heights, always use personal protective equipment.

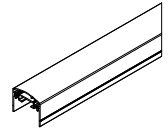
# LIST OF DIFFERENT COMPONENTS:



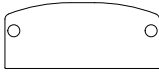
Handrail 51X43 endplate



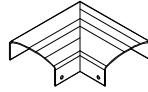
Handrail 51X43 corner



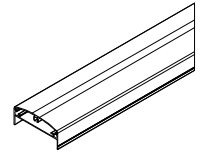
Handrail 51X43



Handrail 82x35 endplate



Handrail 82X35 corner



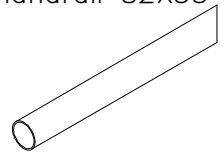
Handrail 82X35



Handrail 42,4X2 end cap



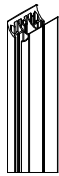
Handrail 42,4X2 corner



Handrail CHS 42,4X2



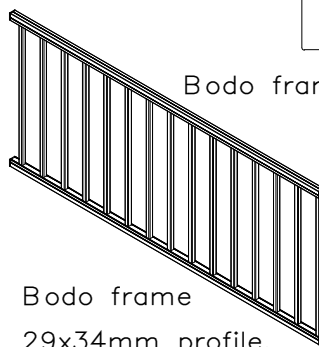
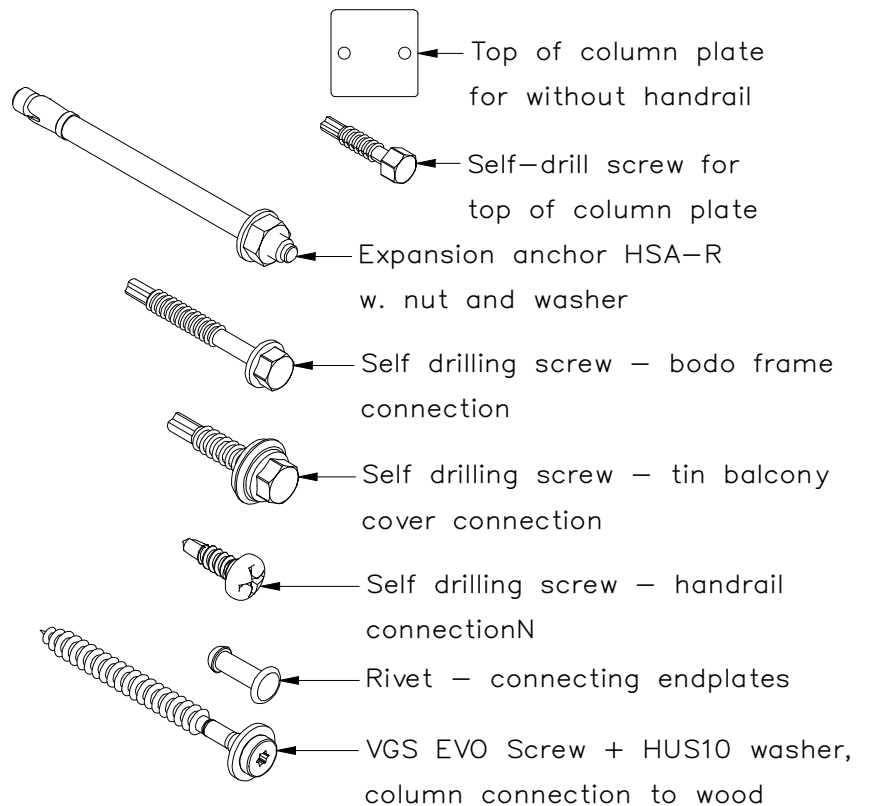
46x46mm  
Column for  
concrete



Milled end of  
railing  
for 42,4x2  
handrail



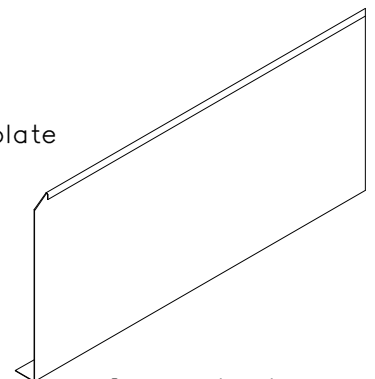
46x46mm  
Column for timber



Bodo frame  
29x34mm profile,  
vertical columns 20x20

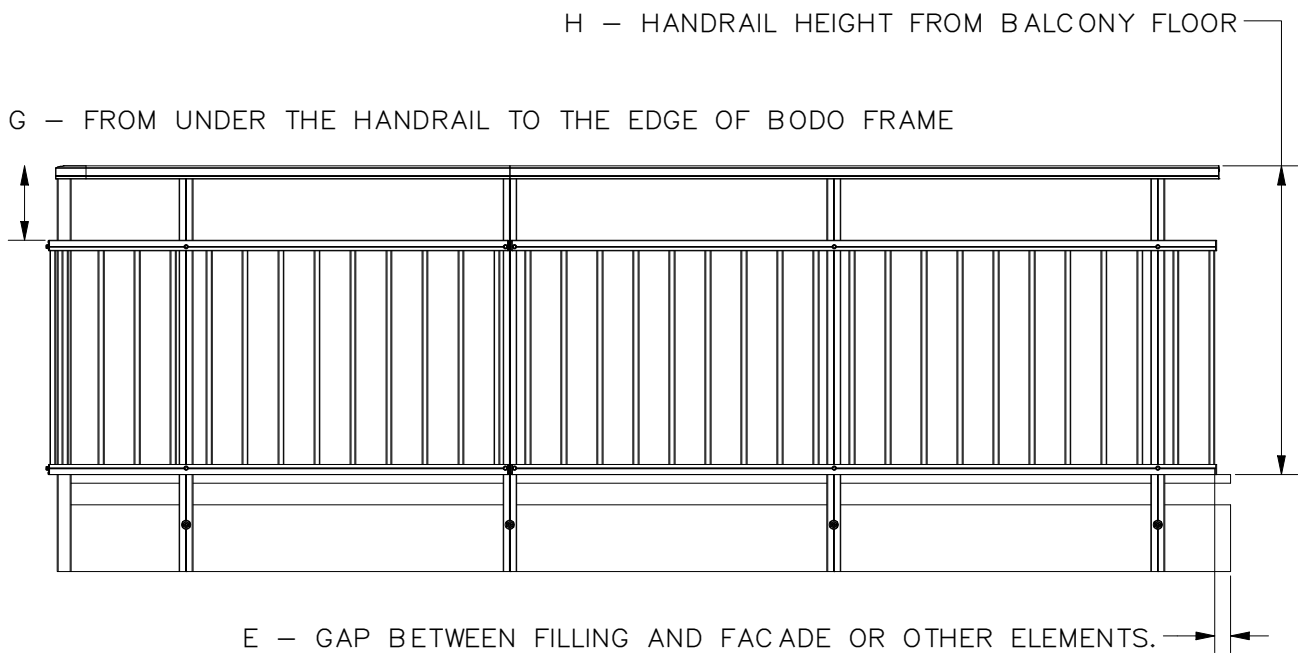


Bodo frame endplate



Cover sheet

# OVERALL REGULATIONS



If you ordered from the e-store, you need to cut the column to the correct length. To calculate the correct length:

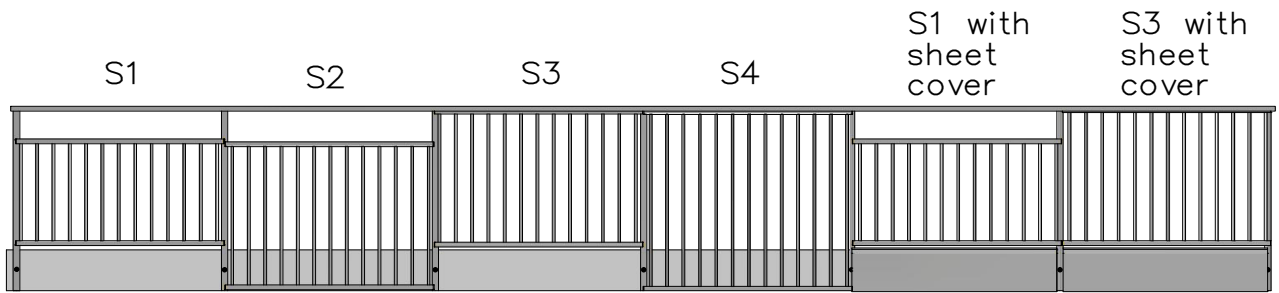
1. Measure your bodo frame height.
2. Add the height of the gap you are leaving. (Usually 0 for side mounted railings)
3. Add the bodo frame height.
4. For S1 and S2 add the G measurement required in your country.
5. Include the portion of the column that is concealed beneath the handrail for its attachment. (For Norway you have to subtract that distance)
6. Add the height of column from bottom of the column to the bottom of bodo frame. (If you left the gap from bodo frame to balcony floor at 0, then you just need to measure the distance between balcony floor to the bottom of column)

**The sum of these values gives you the column height.**

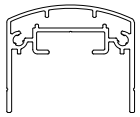
|        | Norway   | Finland  | Estonia  | Sweden        | Denmark  | Germany  |
|--------|----------|----------|----------|---------------|----------|----------|
| G (mm) | MAX 250  | <200     | <200     | <110 AND >230 | MAX 250  | MAX 250  |
| E (mm) | MAX 100  | MAX 50   | MAX 50   | MAX 50        | MAX 100  | MAX 100  |
| H (m)  | 1 or 1.2 | 1 or 1.2 | 1 or 1.2 | 1.1           | 1 or 1.2 | 1 or 1.2 |

\* Norway has a regulation difference: G – From **TOP** of handrail to the edge bodo frame

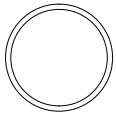
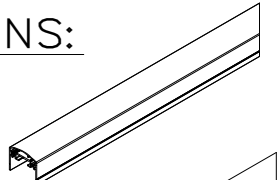
# HANDRAIL AND BODO FRAME OPTIONS FOR BOTH BASE STRUCTURES – CONCRETE & TIMBER.



## S1 OPTIONS:



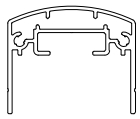
Handrail 51X43



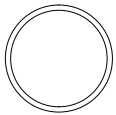
CHS 42,4X2



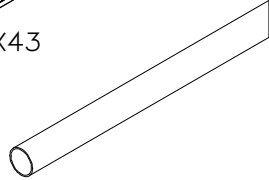
## S2 OPTIONS:



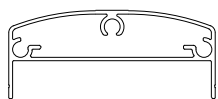
Handrail 51X43



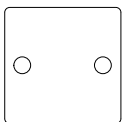
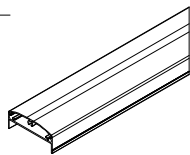
CHS 42,4X2



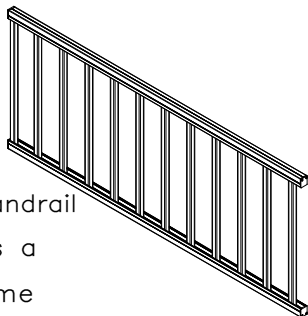
## S3 OPTIONS:



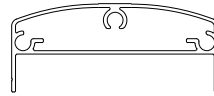
Handrail 82X35



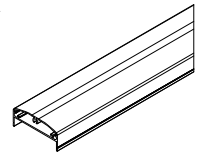
Without separate handrail option. Column has a endplate, bodo frame itself is the handrail.



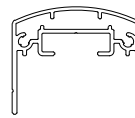
## S4 OPTIONS:



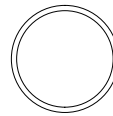
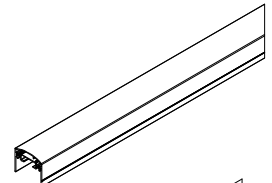
Handrail 82X35



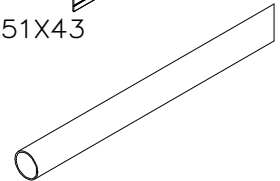
## S1 OPTIONS with sheet cover:



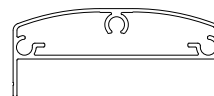
Handrail 51X43



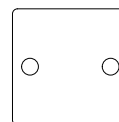
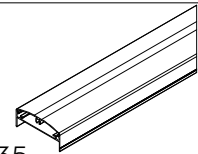
CHS 42,4X2



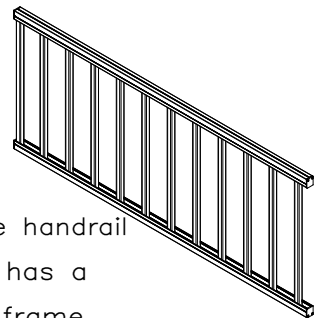
## S3 OPTIONS with sheet cover:



Handrail 82X35



Without separate handrail option. Column has a endplate, bodo frame itself is the handrail.



# STEP 1. CALCULATE DESIRED COLUMN

SPACING (c/c).  $c/c = \frac{C||C}{\text{DESIRED SPACING NUMBER}}$

Make sure your column is exactly between two pickets.

In case your picket increment is 119mm, your spacing should be 833mm or 952mm etc.

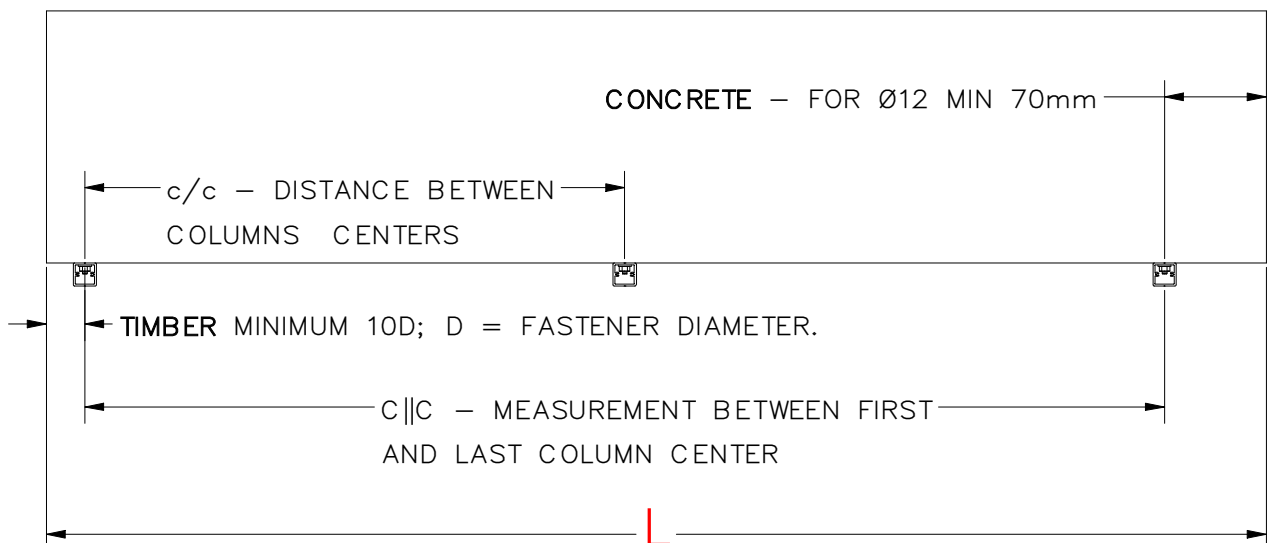
# STEP 2. MARK COLUMN LOCATIONS TO BALCONY

**Important:** ensure all fixing holes follow the handrail height.

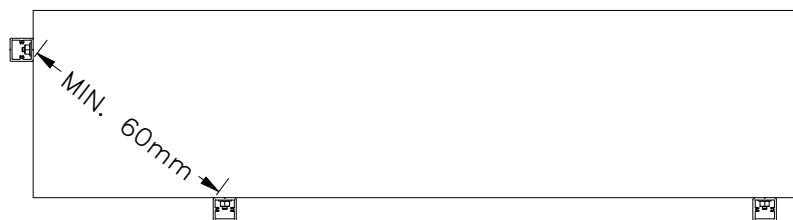
If the base surface is not even, the railing will not be straight.

Typically, the lowest point is measured first,

and the same level is then marked across balcony with a laser.



Start from one side by marking edge column location. Center column locations are marked by c/c measurement. Check C||C measurement when all column locations are marked.



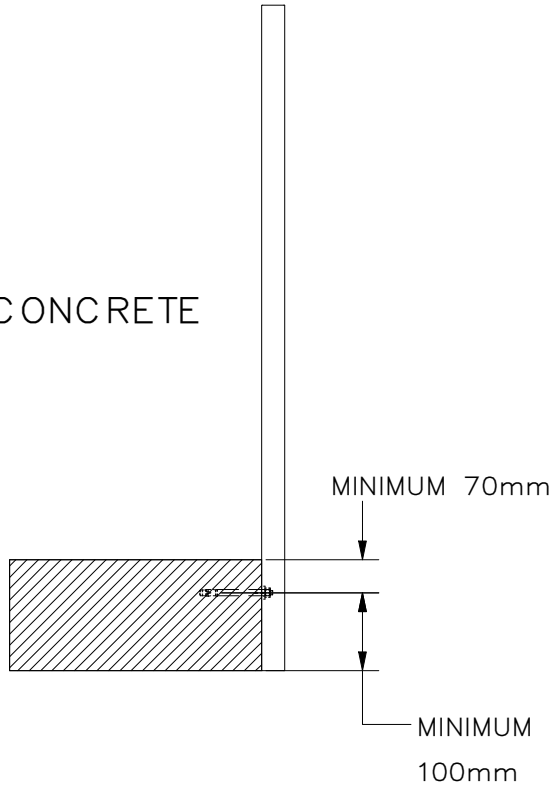
Corner distance from edge to edge has to be over 60mm.

Otherwise there might not be enough space for CHS handrail corner detail installation.

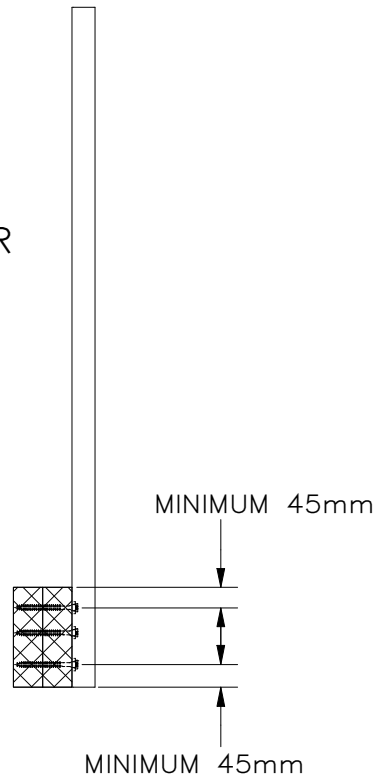
Make sure by trying to fit corner detail between columns in the corner, if it fits there, you have enough space.

Note that the handrail has to go enough inside corner detail to fasten it.

CONCRETE



TIMBER



*HILTI HSA-R WEDGE  
ANCHOR  
DATASHEETS AND  
INFORMATION*



*ROTHOBLAAS VGS EVO  
SCREW DATASHEETS  
AND INFORMATION*

**INNOR**

PRODUCT:  
BODO SIDE

SHEET NAME:  
MEASUREMENTS

DATE:

PAGE:  
7

VERSION:

FORMAT:  
A4

# STEP 3. FASTEN COLUMNS TO STRUCTURE

Pay attention to column orientation. Level the column.

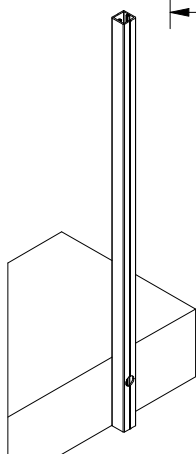
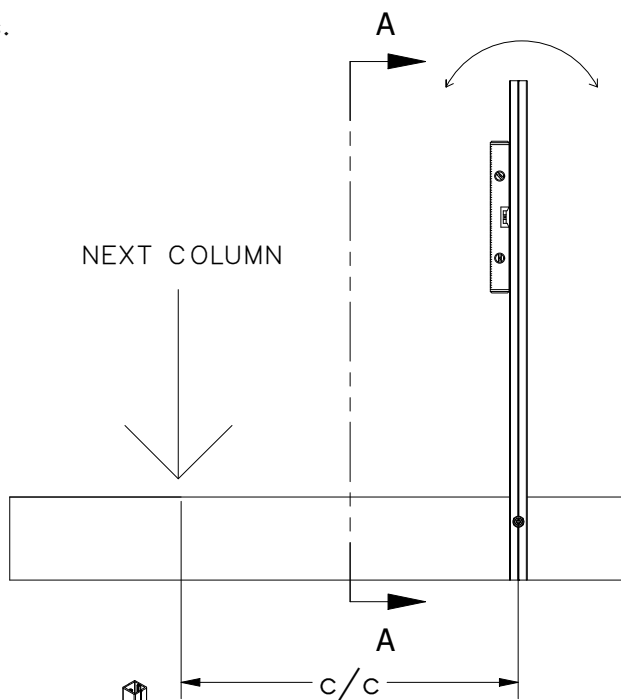
After each column check distance between columns.

## SIDE MOUNTED CONCRETE

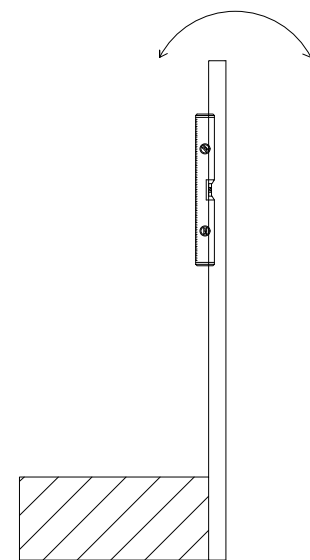
1. Mark the drill bit with a marker to set the correct drilling depth (min. 85 mm for expansion anchor).
2. Drill Ø12mm holes.
3. Clean the holes with a vacuum cleaner.
4. Hammer the anchors into the drilled holes.
5. Place the column onto the anchors.
6. Make sure the column is correctly positioned, use a level.
7. Tighten the nuts by hand if possible, if access if limited, use a socket wrench.
8. Check that the column is securely fixed.
9. Proceed with the installation of the remaining columns.

## SIDE MOUNTED TIMBER

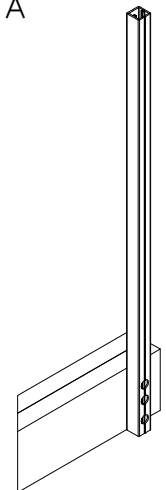
1. Pre-drill Ø6 holes.
2. Before fastening the correct screws tip them into roof sealant.
3. Fix column to balcony with correct fasteners according to project.
4. Check with level before fixing tight.
5. Check that the column is securely fixed.
6. Proceed with the installation of the remaining columns.



CONCRETE



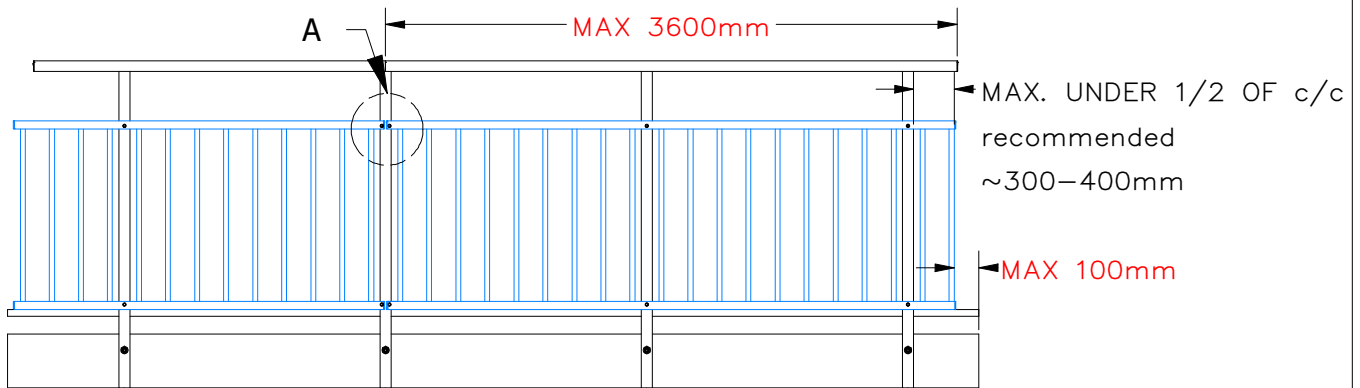
SECTION A-A



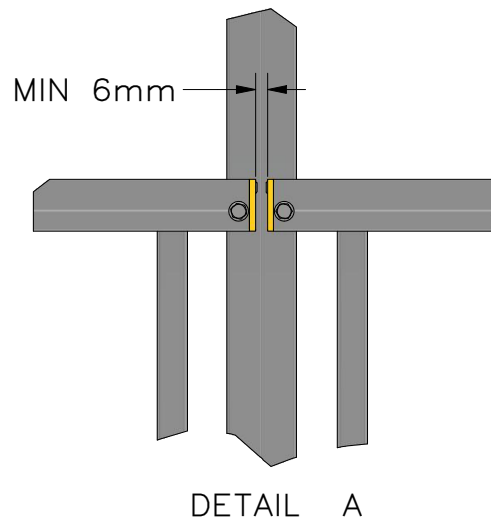
TIMBER

## STEP 4. FIX BODO FRAMES TO COLUMNS.

1. Bodo frame has already been assembled according to ordered dimensions.
2. It is recommended to have an assistant for this step, or use distance blocks when fastening the screws.
3. Follow the height given from configurator to position the railing at the correct height.
4. Use two self-drilling screws per column to secure the Bodo railing: one at the bottom and one at the top (depending on the railing height).



- Maximum length of BODO railing is 3600mm, if balcony's side is longer it is necessary to make a continuation. Continuation should be made at the center of the column.

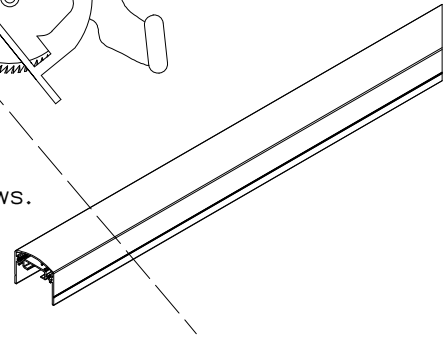
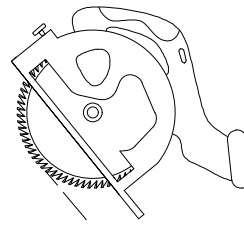
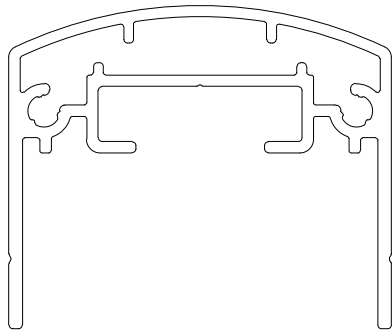


**NB!** If you purchased the 3m frame section (Bodo section) from the online store, it comes without pre-drilled mounting holes due to variable column spacing.

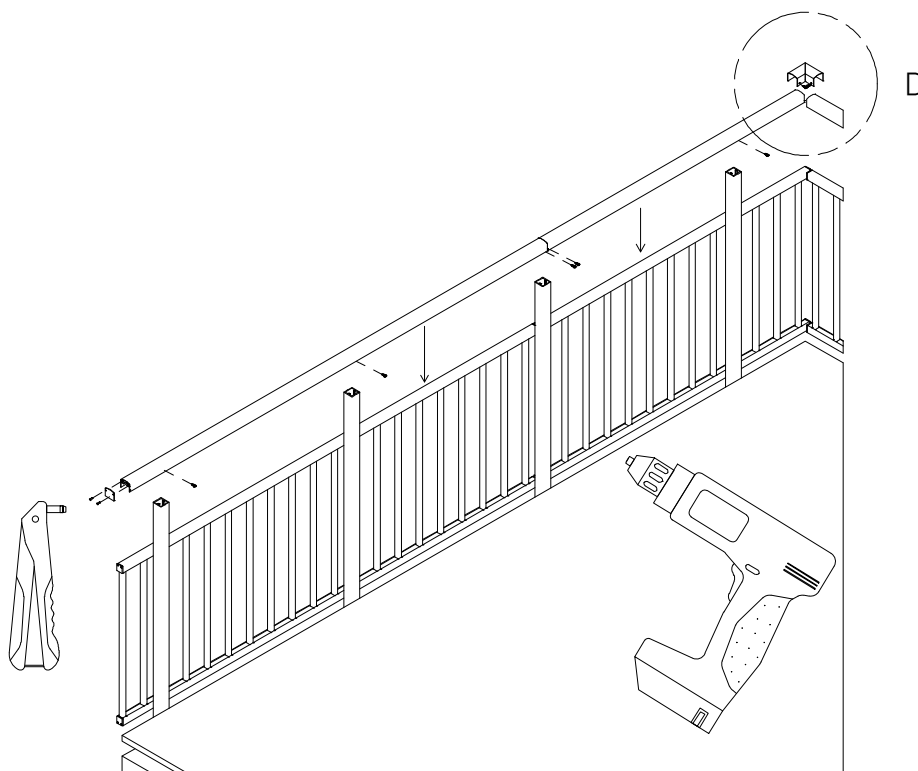
Drill holes on site as follows:

1. Use a drill bit 1.5 mm larger than the screw diameter.
2. When drilling aluminium, use ethanol for a clean cut.
3. Make sure the condensation holes face downward during installation.

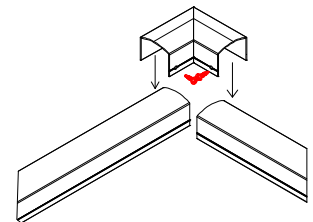
# STEP 5. CUT AND FIX THE HANDRAIL HANDRAIL 51X43



Cut the handrail to desired length.  
Fasten handrail to columns using self-drilling screws.  
Optional endplates are installed with rivets.



DETAIL D



The corner piece is fastened to the handrail with self drilling screws. In case the corner piece overlaps a column, secure both the corner and the handrail to the post by the same screw.

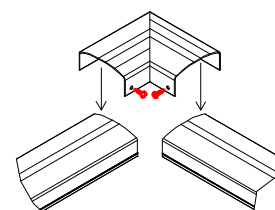
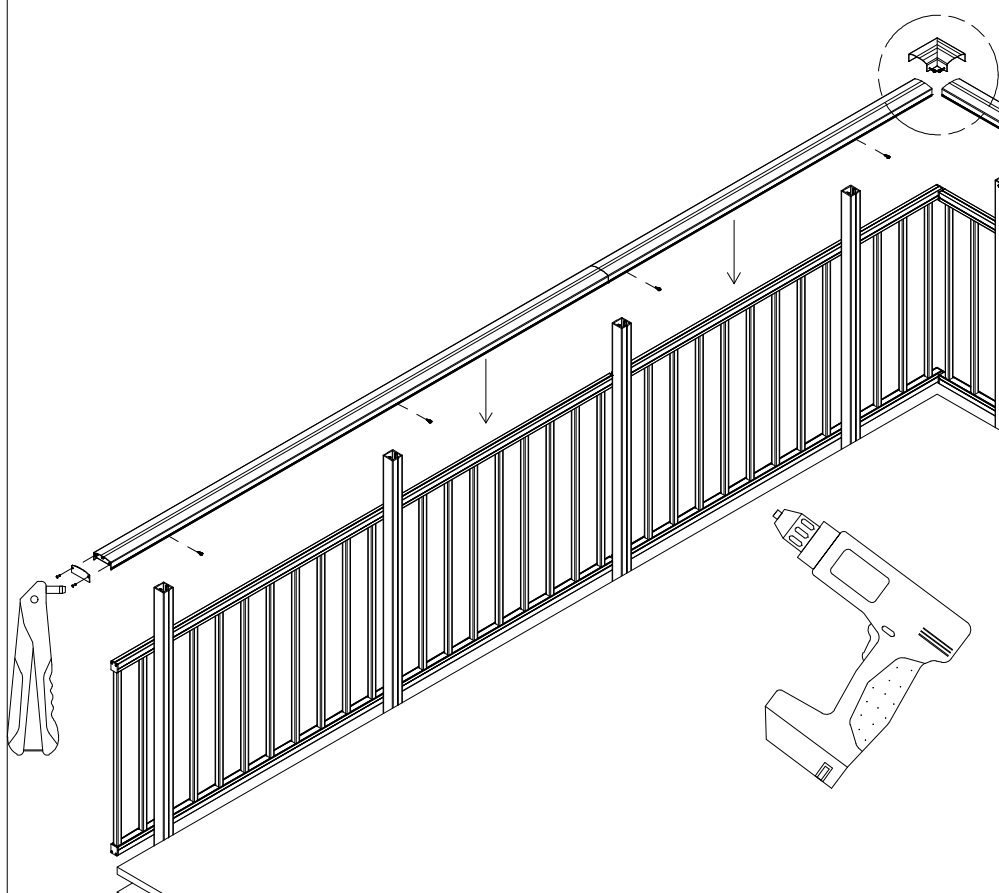
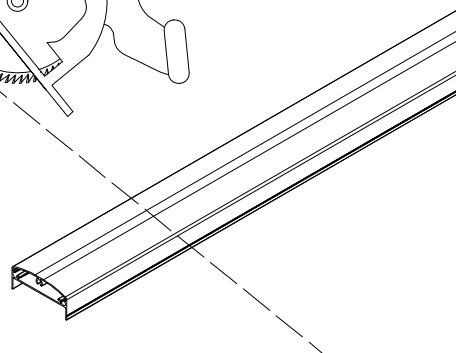
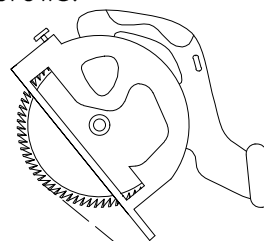
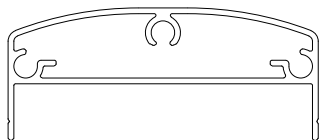
## STEP 5. CUT AND FIX THE HANDRAIL

Cut the handrail to desired length.

Fasten handrail to columns using self-drilling screws.

Optional endplates are installed with rivets.

### HANDRAIL 82x35



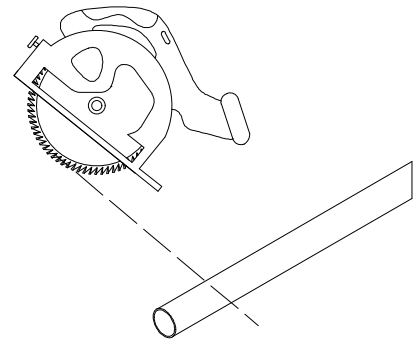
DETAIL E

The corner piece is fastened to the handrail with self drilling screws. In case the corner piece overlaps a column, secure both the corner and the handrail to the post by the same screw.

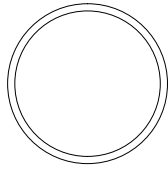
# STEP 5. CUT AND FIX THE HANDRAIL

Cut the handrail to desired length.

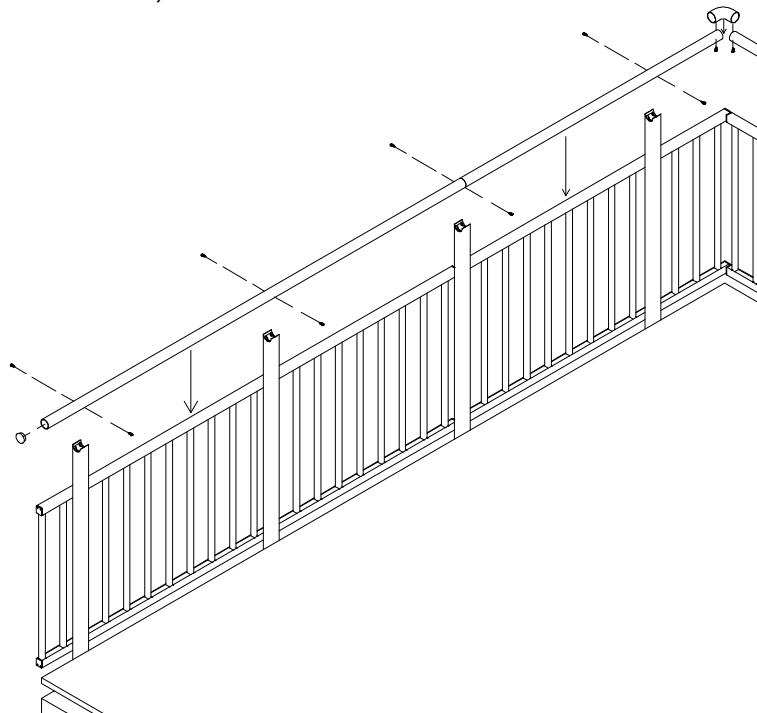
Fasten handrail to columns using self-drilling screws.



CHS 42,4X2



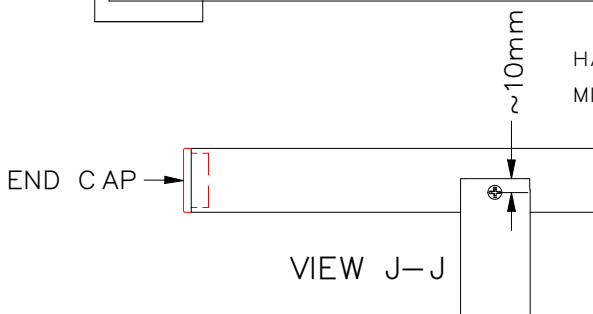
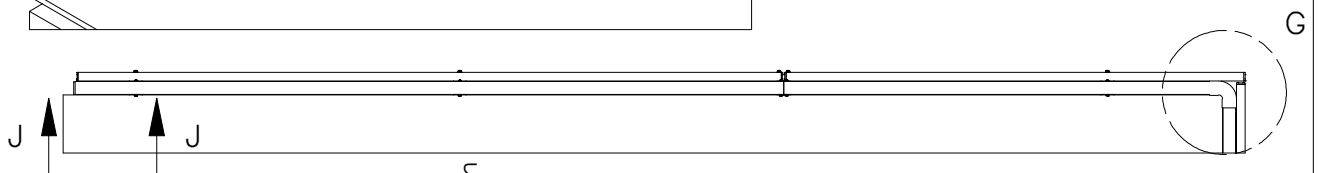
2 screws per column; in case of handrail continuation, the connection is made with rivet.



Note that CHS handrail is fastened with self-drilling screws from both sides.

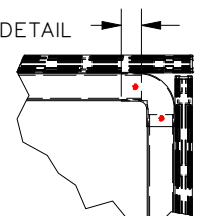
Ensure that the handrail extends at least flush with the column edge so that the fixing screw does not interfere with the end cap.

You need to press the handrail firmly while drilling the screw to prevent it from lifting.



Handrail has to be at least flush with the column so self drilling screw does not interfere with endcap.

HANDRAIL MUST BE INSIDE CORNER DETAIL  
MIN 20mm; MAX IS 35mm



DETAIL G

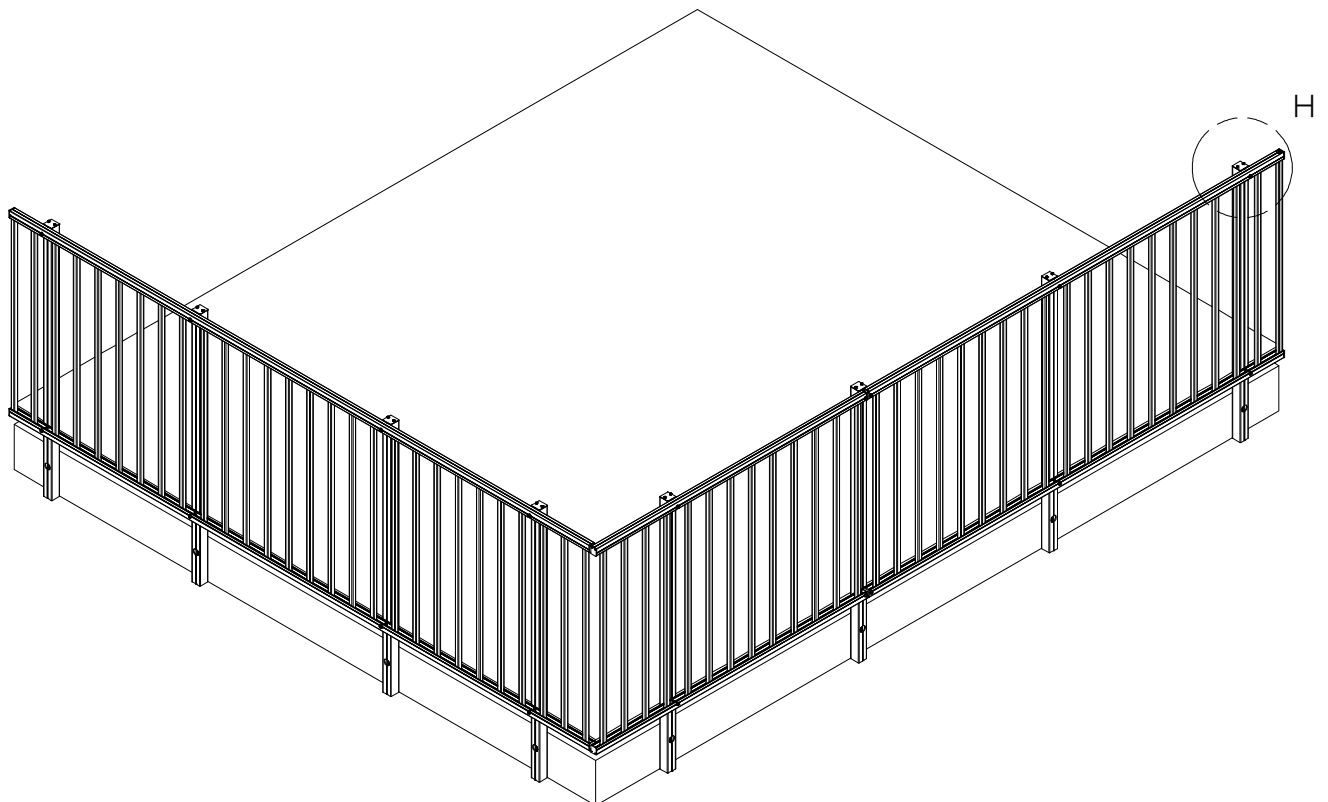
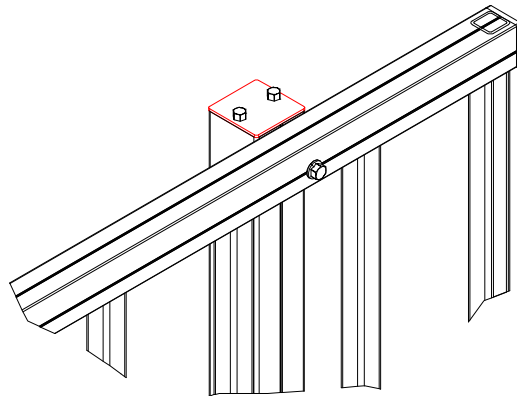
## ROUND HANDRAIL CORNER.

The red-marked screws are used to fasten the corner detail to the handrail. Leave enough room between the handrail end and the column to allow access for the screw underneath or from side.

# STEP 5. CUT AND FIX THE HANDRAIL

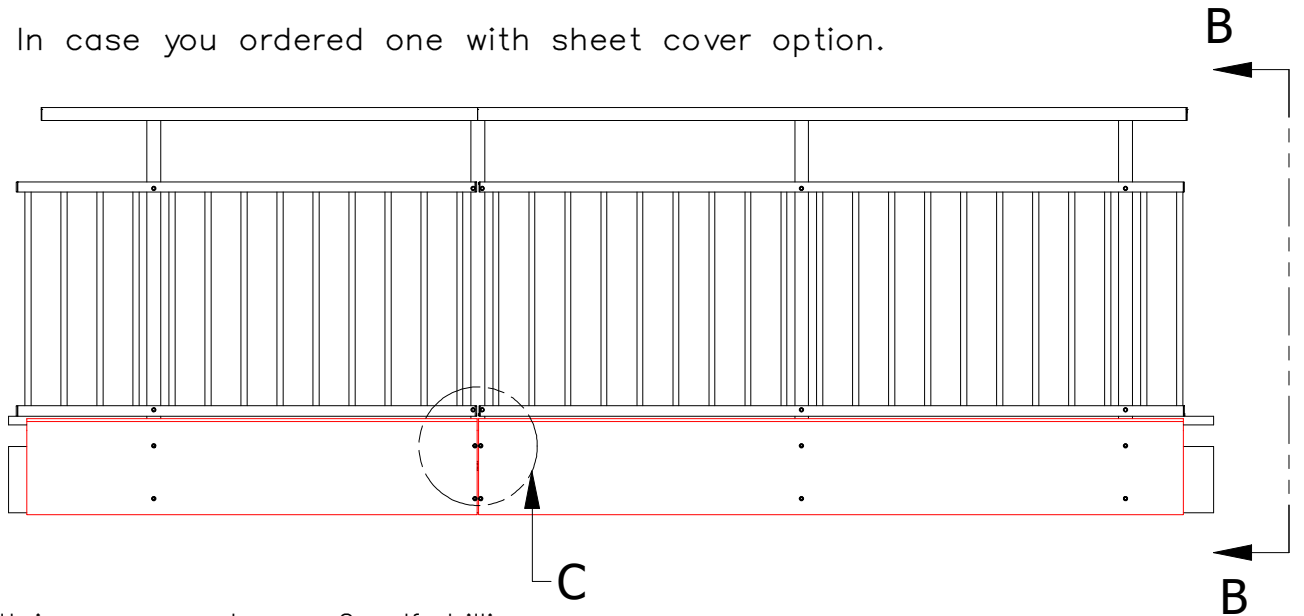
This option does not have a handrail, instead it has 2x46x46mm endplates fastened with self drilling screws to the top of the columns.

DETAIL H



# STEP 6. FASTEN BALCONY SHEET COVER.

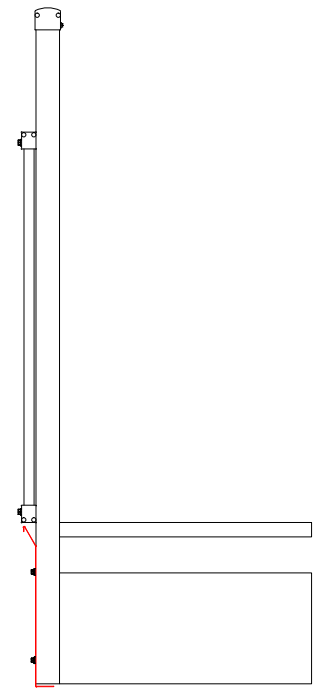
In case you ordered one with sheet cover option.



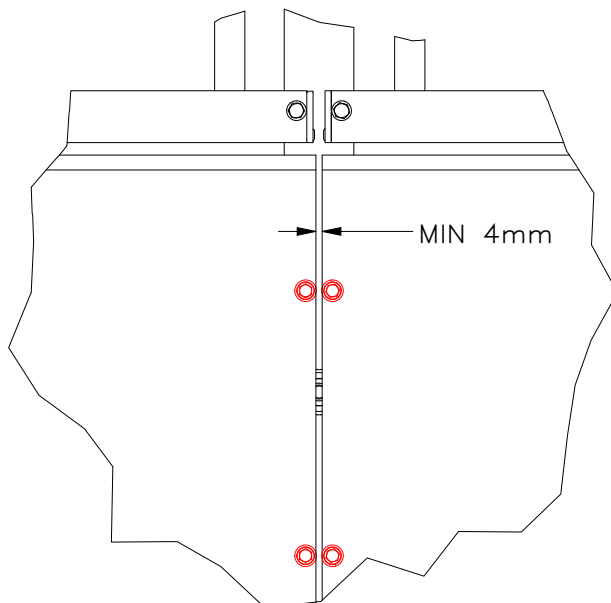
It is necessary to use 2 self drilling screws per column while fastening sheet cover.

Max sheet cover length is 2980mm.

If the balcony is wider than 2980mm, then it is necessary to make a continuation. Continuation should be made in the center of the column.



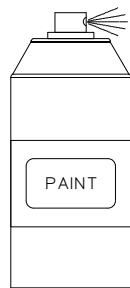
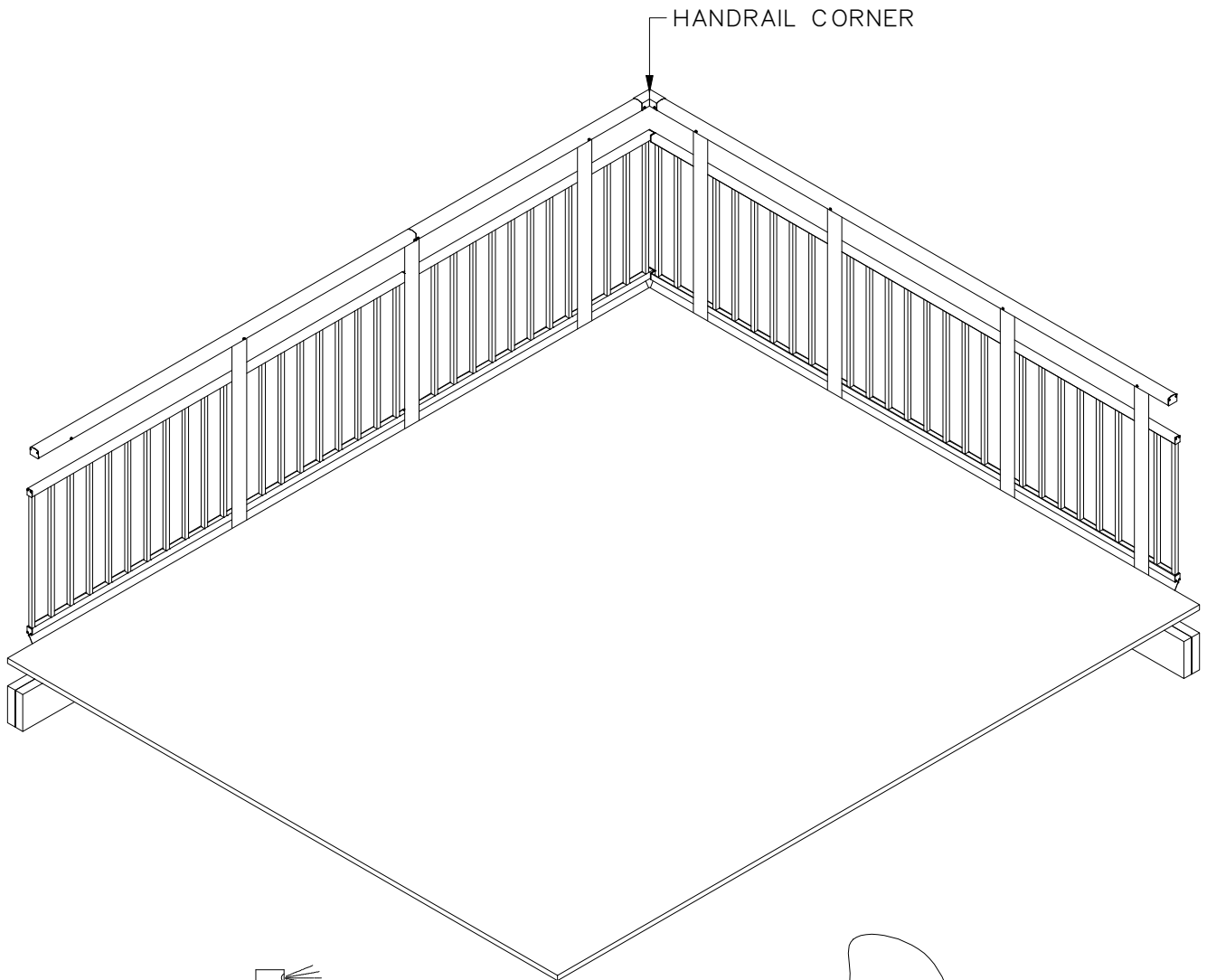
VIEW B-B



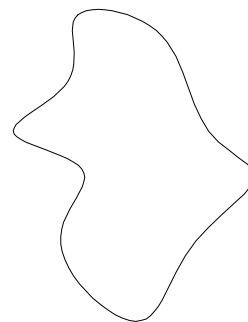
DETAIL C

## STEP 7. FINISH THE BALCONY ASSEMBLY

- Install handrail corners if needed.
- Clean railing with microfiber cloth.
- If any damage has occurred during installation to painted parts, repair paint with correct RAL code can be used!



RE-PAINT IF NEEDED



CLEAN THE ASSEMBLY

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Designed for safety, built to last.

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Keep your railing in perfect condition:

- Clean regularly with mild detergent and water.
- Check fasteners and joints periodically.
- Avoid harsh chemicals or abrasive cleaners.
- Follow detailed steps in the Maintenance Guide.

For detailed information, see:

Maintenance Guide:

If you have any questions or need assistance, don't hesitate to contact us:

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Website: [www.innore.eu](http://www.innore.eu)

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Stay safe – and enjoy your view!

