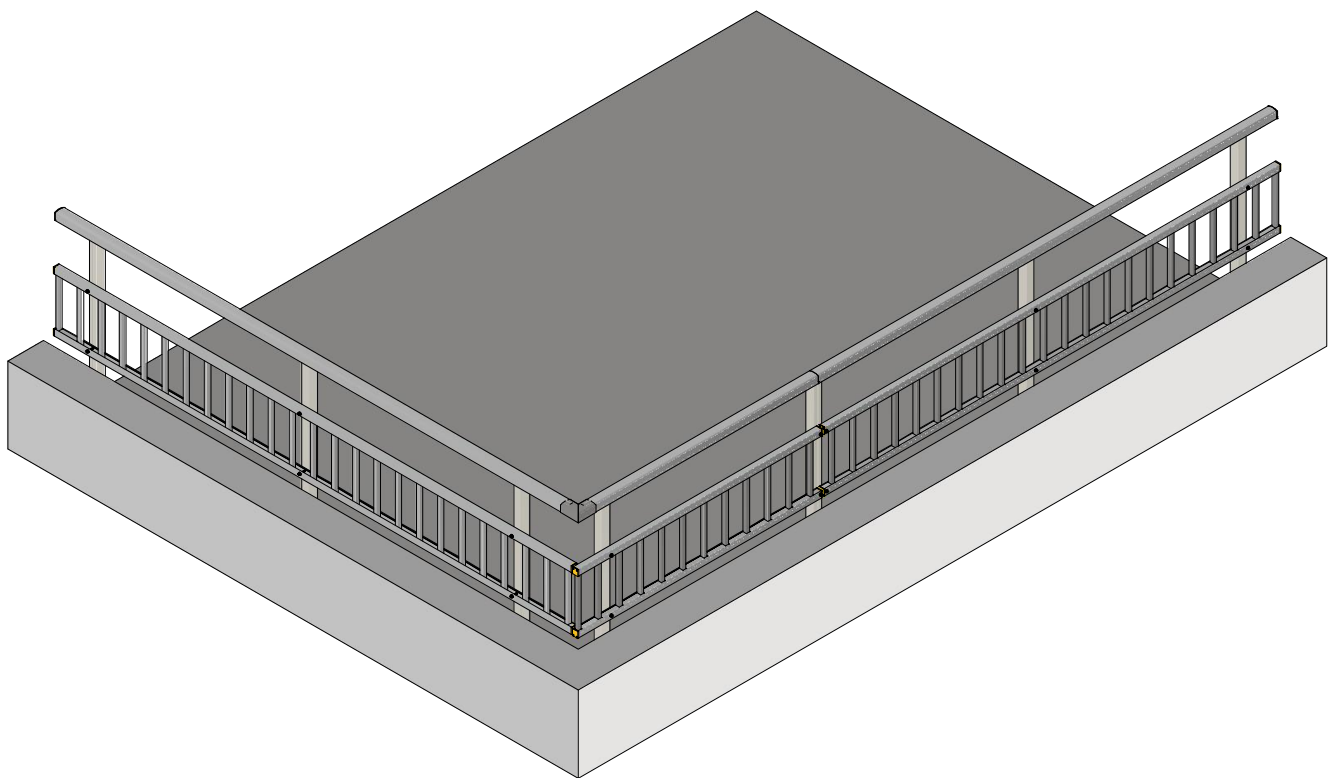


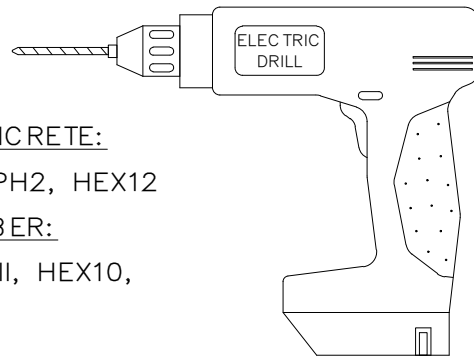
BALCONY RAILING

BODO  
PARAPET  
MOUNTED

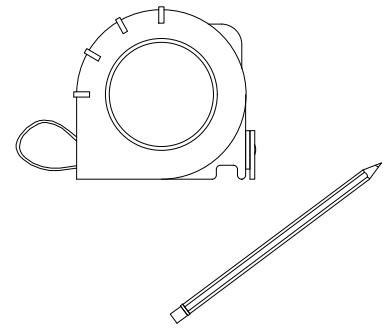
INSTALLATION MANUAL



# NECESSARY AND ADDITIONAL HELPFUL ITEMS FOR INSTALLATION:



Drillbits for CONCRETE:  
 SDS plus M12, PH2, HEX12  
 Drillbits for TIMBER:  
 Ø6mm wood drill, HEX10,  
 TX50, PH2

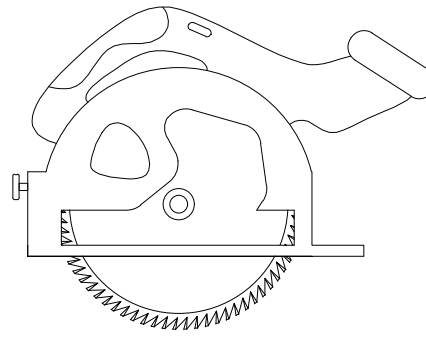


Electric drill for TIMBER  
 Hammer drill for CONCRETE

Measuring tape & pencil



Soapy water spray  
 (Optional)



Angular saw  
 cold cut



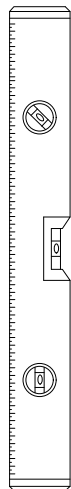
Repair paint  
 (Optional)



Riveting pliers



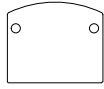
## CAUTION



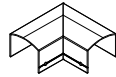
Level

- **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.

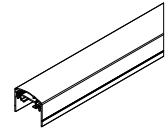
# LIST OF DIFFERENT COMPONENTS:



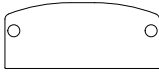
Handrail 51X43 endplate



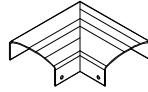
Handrail 51X43 corner



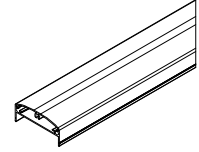
Handrail 51X43



Handrail 82x35 endplate



Handrail 82X35 corner



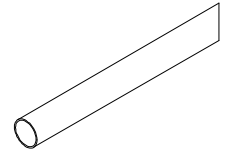
Handrail 82X35



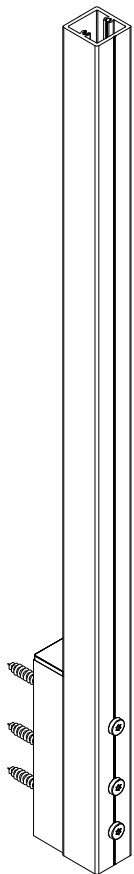
Handrail 42,4X2 end cap



Handrail 42,4X2 corner

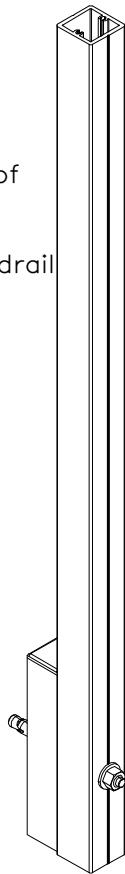
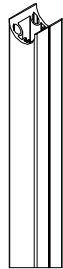


Handrail CHS 42,4X2



46x46mm  
Column with  
connection to  
timber

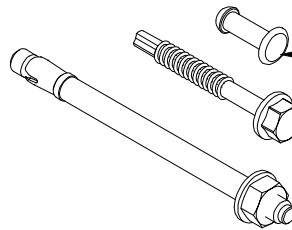
Milled end of  
railing for  
42,4x2 handrail



46x46mm  
Column with  
connection to  
concrete



40x40mm distance profile



Rivet, endplate to handrail



Self-drill screw,  
bodo frame to column.



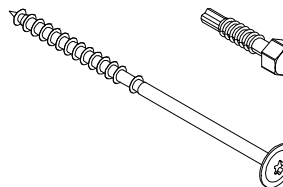
Expansion anchor HSA-R  
w. nut and washer,  
connecting column to balcony



Self-drill screw  
for handrail fastening



Top of column plate  
for without handrail



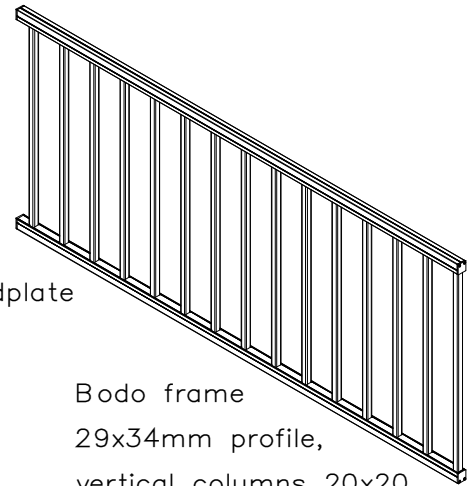
Self-drill screw for  
top of column plate



TBS EVO,  
connecting column to balcony

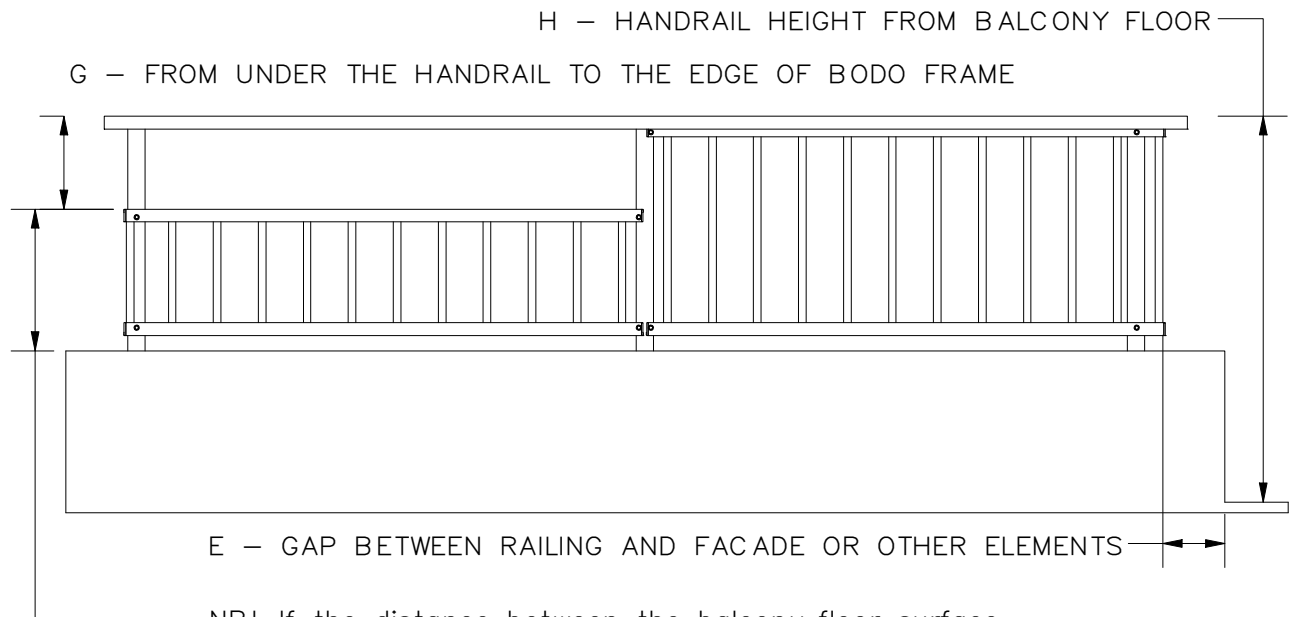


Bodo frame endplate



Bodo frame  
29x34mm profile,  
vertical columns 20x20

# 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 bodo frame height.
3. Add the G measurement required in your country.
4. Include the portion of the column that is concealed beneath the handrail for its attachment. (For Norway you have to subtract that distance)
5. Add the distance from bottom of column to the start of bodo frame.

**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
P (mm)	750	700	700	700	700	700

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



PRODUCT:  
BODO  
PARAPET  
DATE:

SHEET NAME:  
OVERALL REGULATIONS

PAGE:  
4

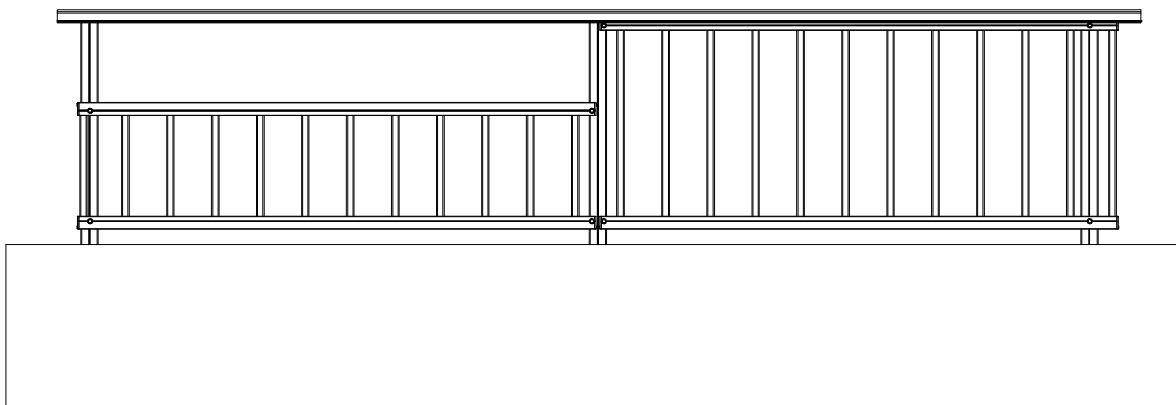
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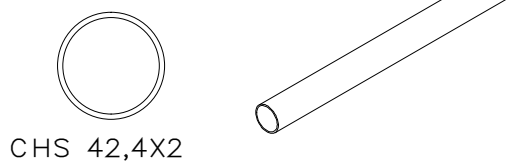
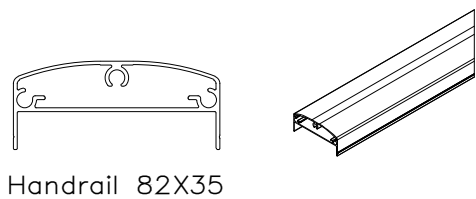
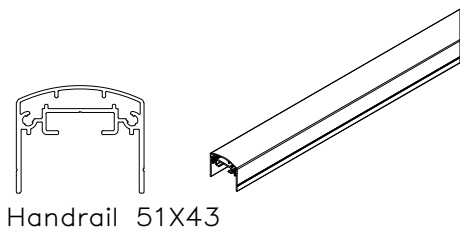
# HANDRAIL AND BODO FRAME OPTIONS FOR BOTH BASE STRUCTURES – CONCRETE & TIMBER.

P1

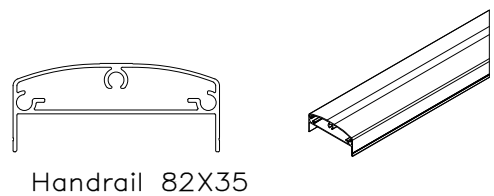
P3



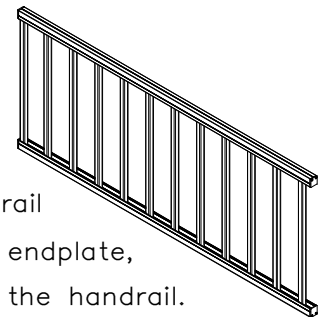
## P1 OPTIONS:



## P3 OPTIONS:



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

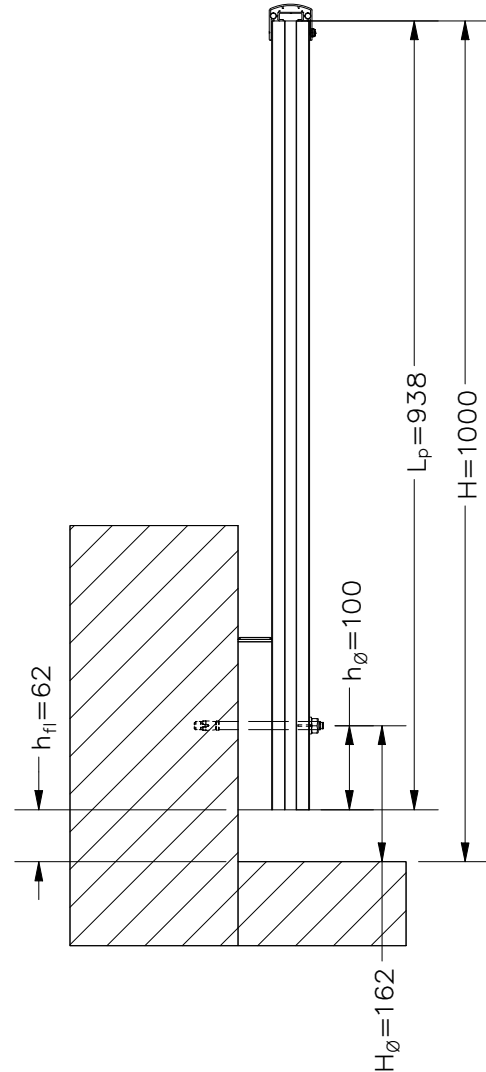
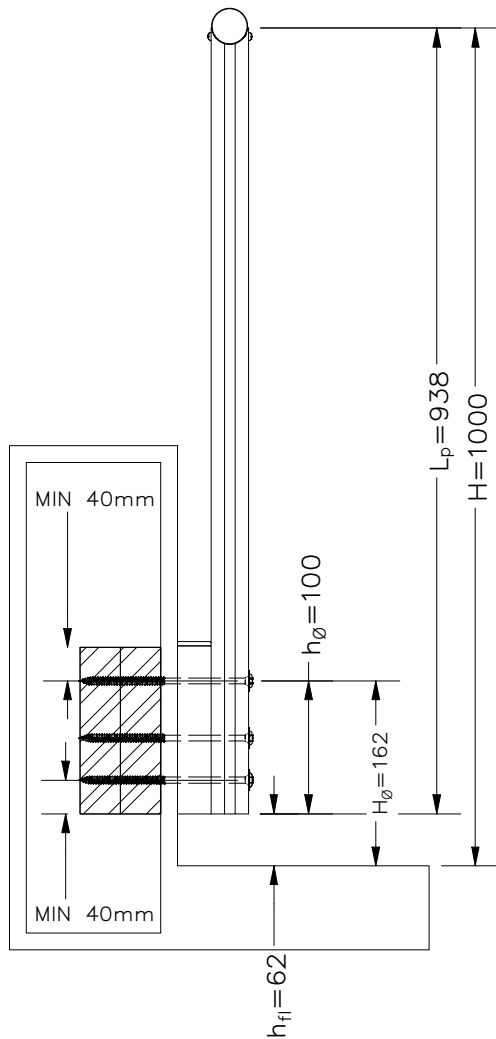


SEE STEP 6 FOR FURTHER INFORMATION  
ABOUT DIFFERENT TYPES OF HANDRAILS.

# STEP 1. CALCULATE THE HEIGHT OF DRILL HOLES

MIN. STRUCTURE THICKNESS, TIMBER, 100mm  
 MIN. STRUCTURE HEIGHT, TIMBER, 180mm

C25/30 CONCRETE  
 MIN. 180mm CONCRETE THICKNESS  
 MIN. 350mm CONCRETE HEIGHT



$H$  = Given measure of the end column height from ground floor

$L_p$  = Given column length

$h_{fi} = H - L_p$ , Where end result gives column distance from ground

$h_{\emptyset}$  = Given hole is already predrilled

$H_{\emptyset} = h_{\emptyset} + h_{fi}$  = Hole center from ground

## EXAMPLE OF CALCULATION.

$H = 1000$  mm

$L_p = 938$  mm Column length

$h_{fi} = H - L_p = 62$  mm Height from floor to bottom of column

$h_{\emptyset} = 100$  mm Hole center from bottom of

$H_{\emptyset} = h_{\emptyset} + h_{fi} = 162$  mm Hole center from floor ground

## STEP 2. 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 714mm, 833mm or 952mm etc.

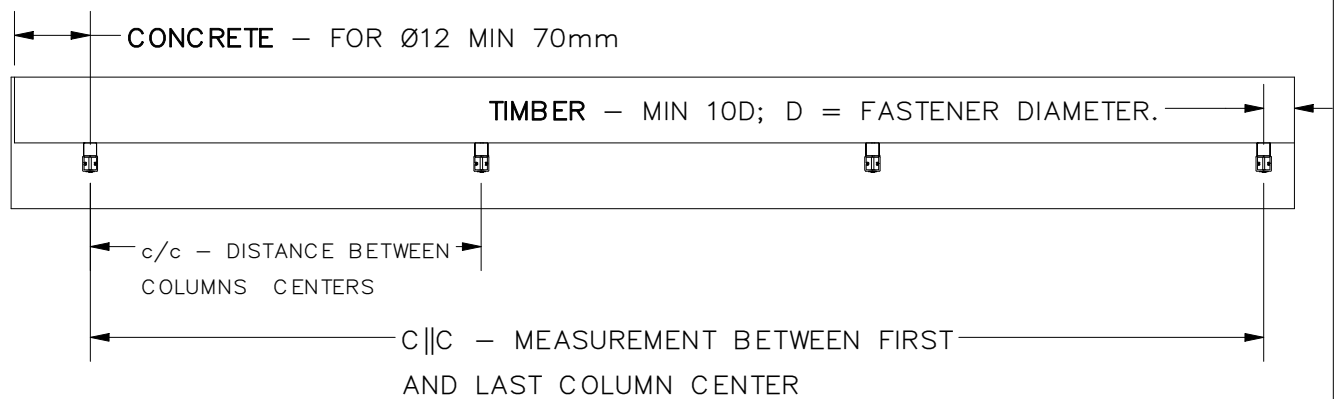
## STEP 3. MARK THE DRILL HOLES TO BALCONY

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

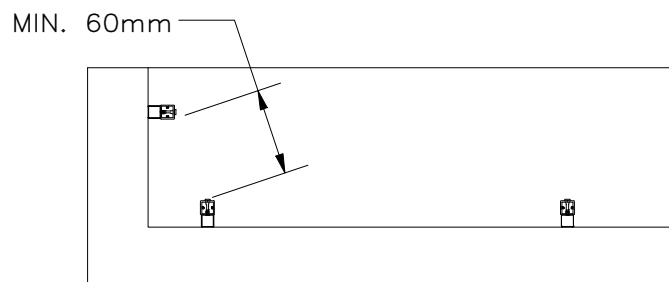
If the base surface is not even, the railing will not be straight.

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.

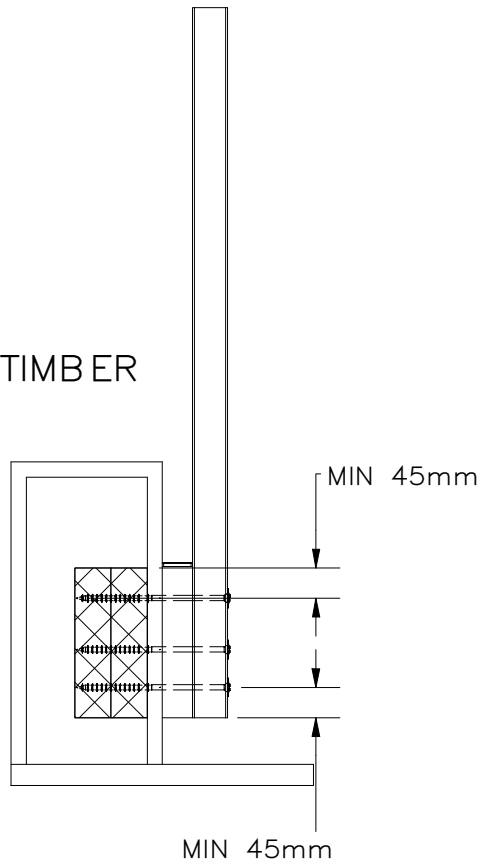
Otherwise there might not be enough space for CHS handrail corner detail installation.

Make sure by trying to fit corner detail between columns in the corner,

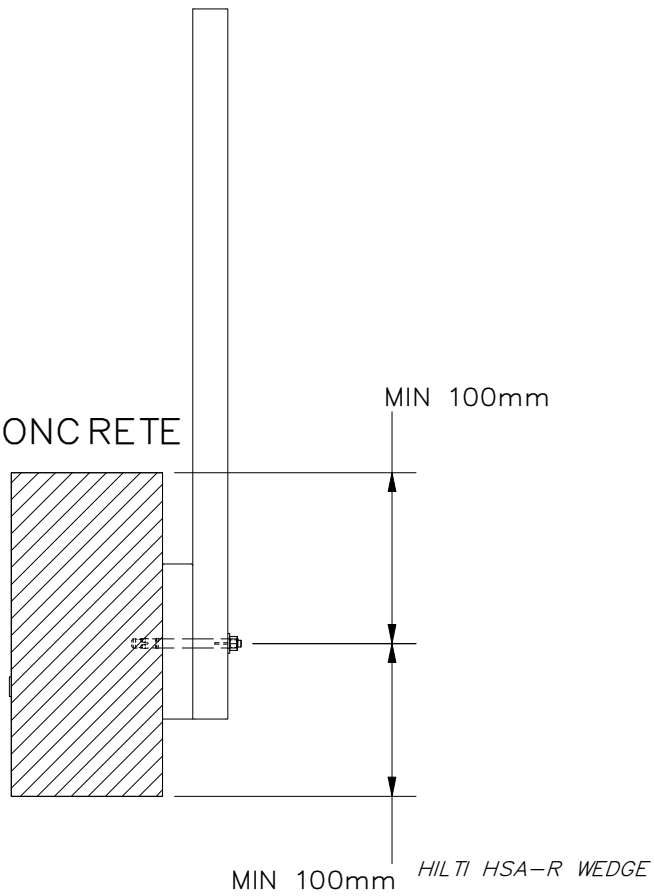
if it fits there, you have enough space.

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

TIMBER



CONCRETE



*ROTHBLAAS TBS EVO  
SCREW DATASHEETS  
AND INFORMATION*



*HILTI HSA-R WEDGE  
ANCHOR  
DATASHEETS AND  
INFORMATION*



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# STEP 4. FASTEN COLUMNS TO STRUCTURE

Pay attention to column orientation. Level the column.

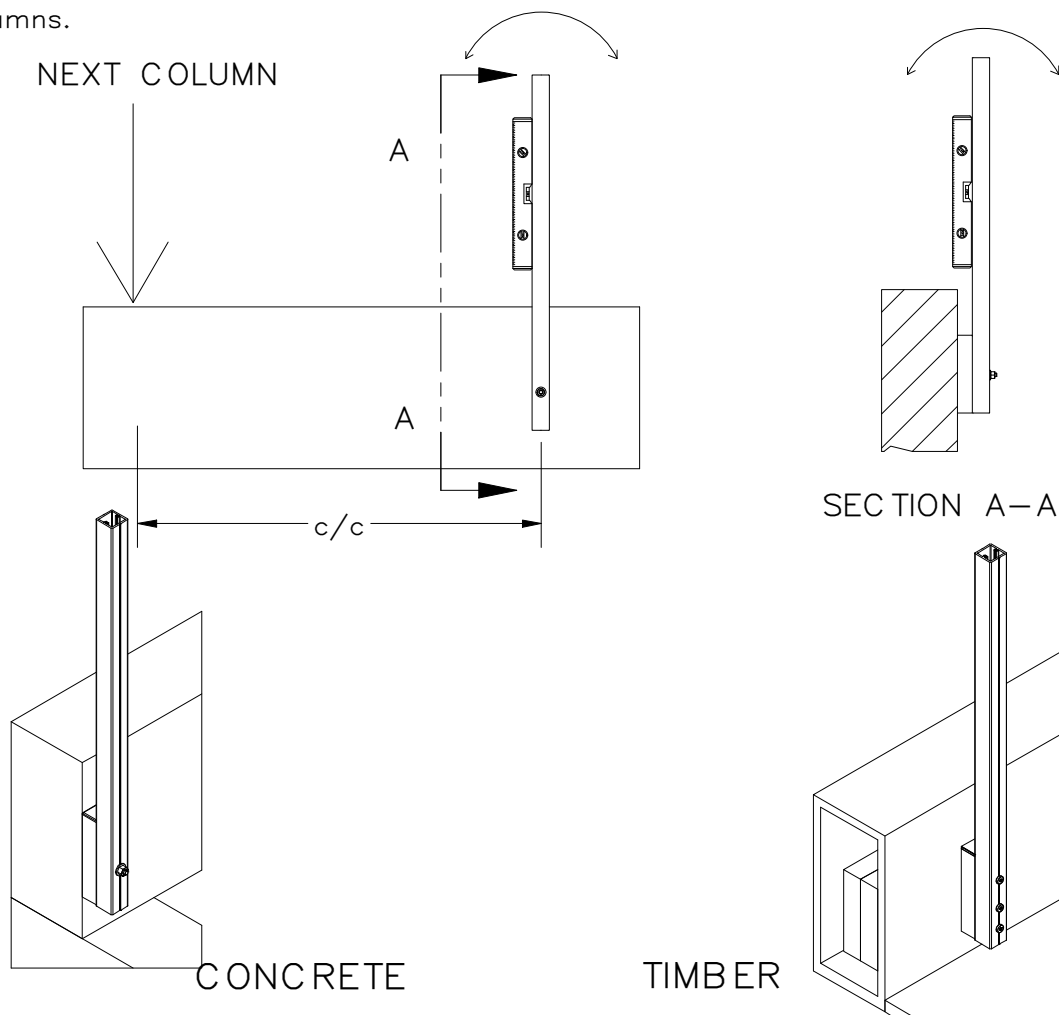
After each column check distance between columns.

## PARAPET MOUNTED CONCRETE

1. Mark the drill bit with a marker to set the correct drilling depth (min. 85 mm for expansion anchor).
2. Drill  $\varnothing 12$ mm holes.
3. Clean the holes with a vacuum cleaner.
4. Before fixing the anchor, tip the anchor into roof sealant to eliminate water damage.
5. Hammer the anchors into the drilled holes.
6. Place the column onto the anchors.
7. Make sure the column is correctly positioned, use a level.
8. Tighten the nuts by hand if possible, if access if limited, use a socket wrench.
9. Check that the column is securely fixed.
10. Proceed with the installation of the remaining columns.

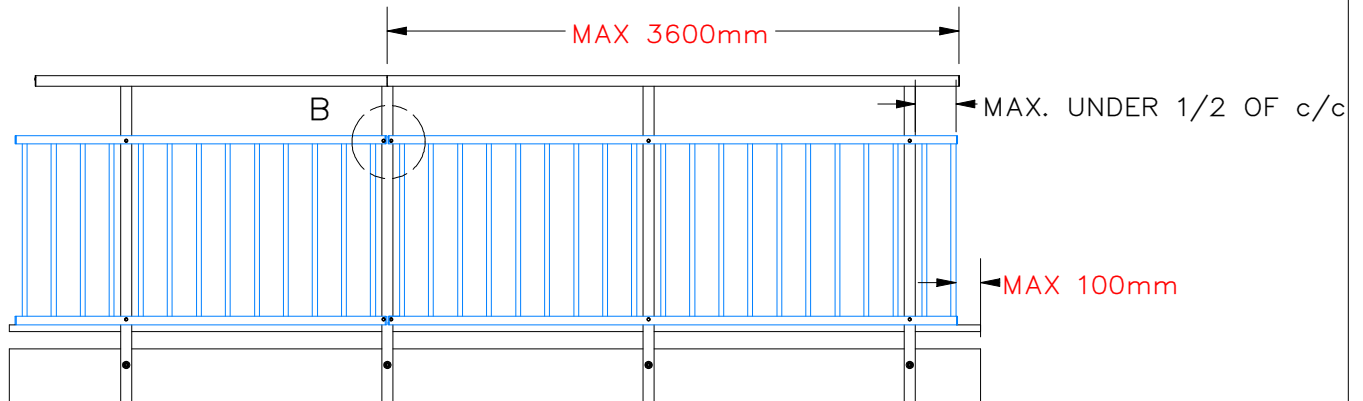
## PARAPET MOUNTED TIMBER

1. Predrill  $\varnothing 6$  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.

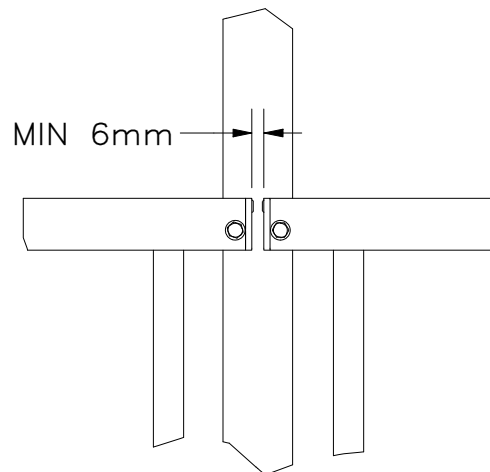


## STEP 5. FIX BODO FRAMES TO COLUMNS.

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 in the center of the column.



DETAIL B

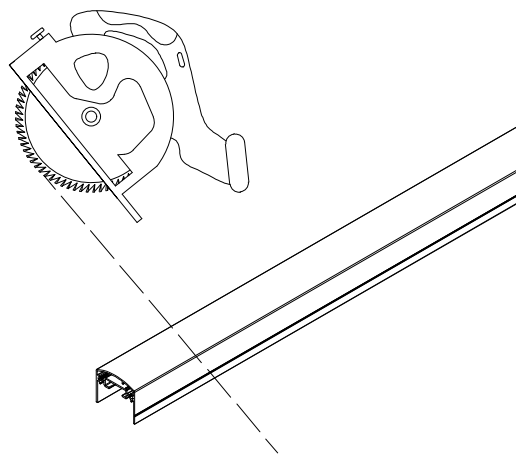
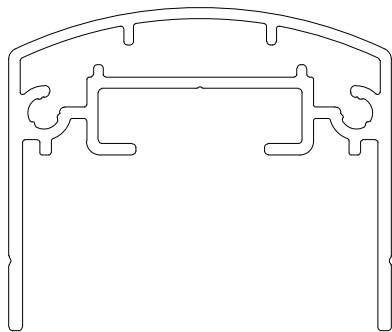
**NB!** If you purchased the 3m frame section (Bodo section) from the online store, it comes without pre-drilled mounting holes due to variable column spacing.

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 6. CUT AND FIX THE HANDRAIL

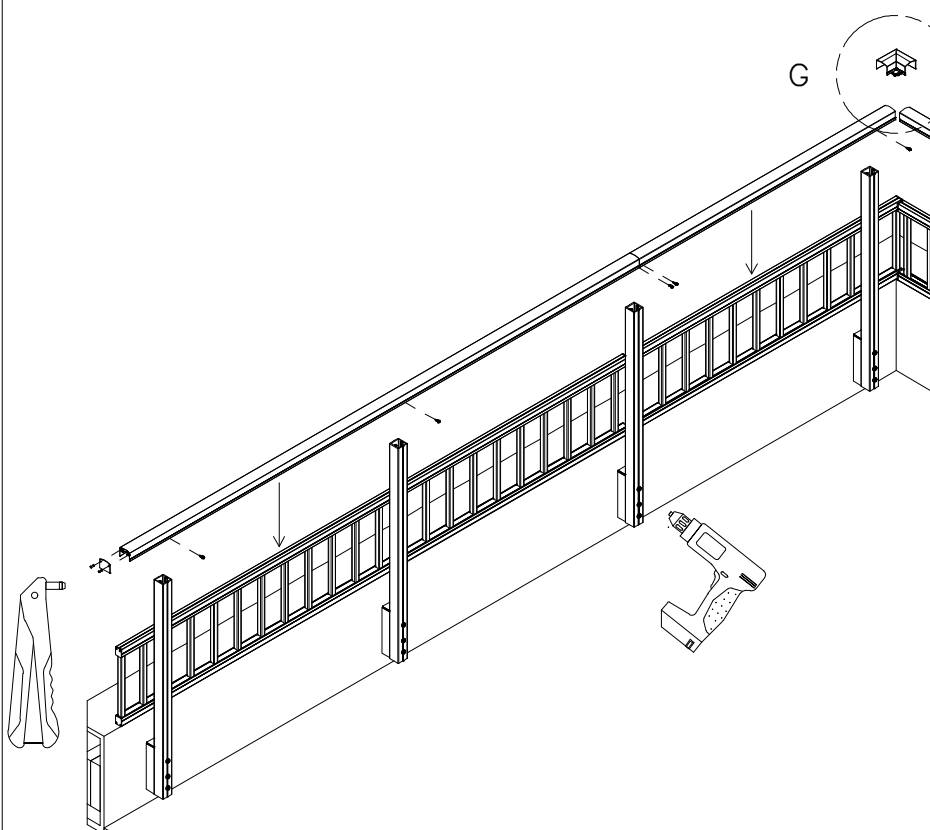
## HANDRAIL 51X43



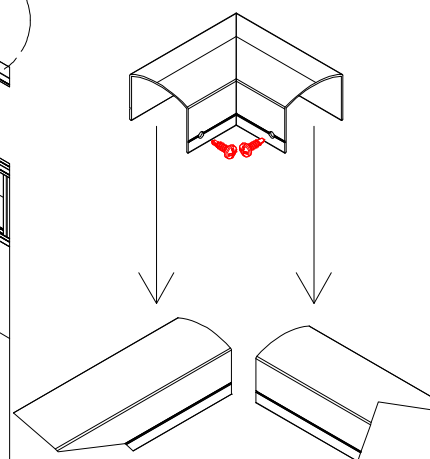
Cut the handrail to desired length.

Fasten handrail to columns using self-drilling screws.

Optional endplates are installed with rivets.



DETAIL G



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.

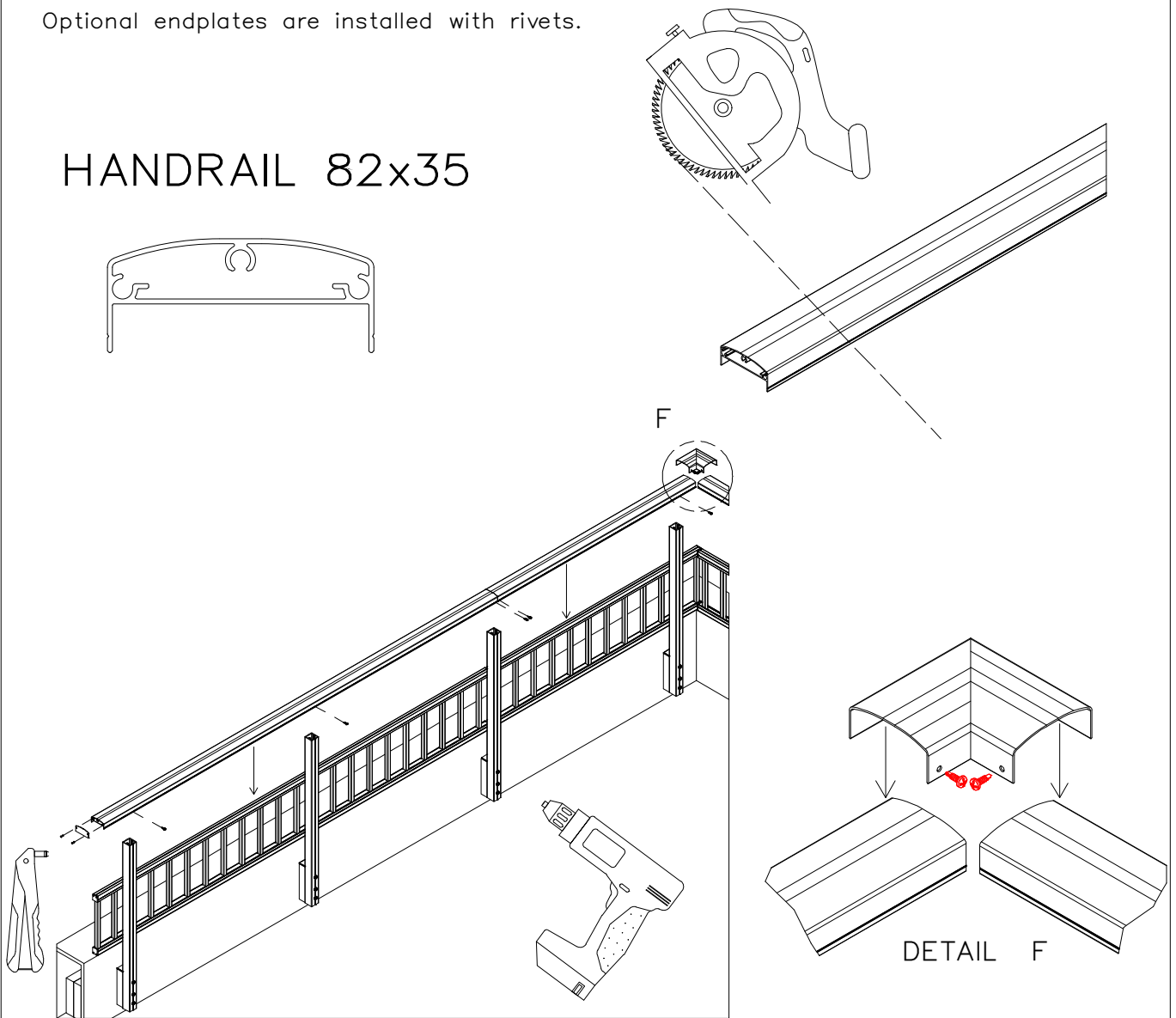
# STEP 6. CUT AND FIX THE HANDRAIL

Cut the handrail to desired length.

Fasten handrail to columns using self-drilling screws.

Optional endplates are installed with rivets.

## HANDRAIL 82x35



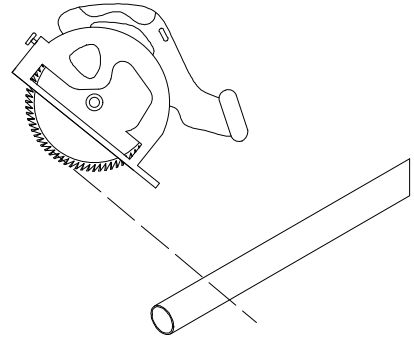
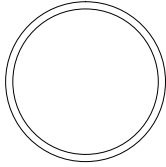
The corner piece is fastened to the handrail with self drilling screws. In case the corner piece overlaps a column, secure both the corner and the handrail to the post by the same screw.

# STEP 6. CUT AND FIX THE HANDRAIL

Cut the handrail to desired length.

Fasten handrail to columns using self-drilling screws.

## CHS 42,4X2

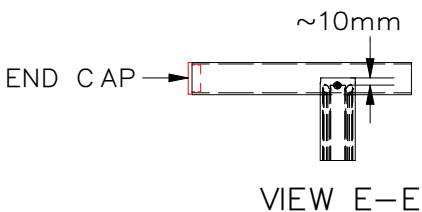
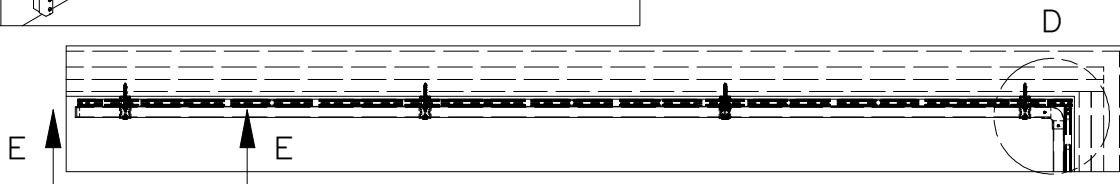
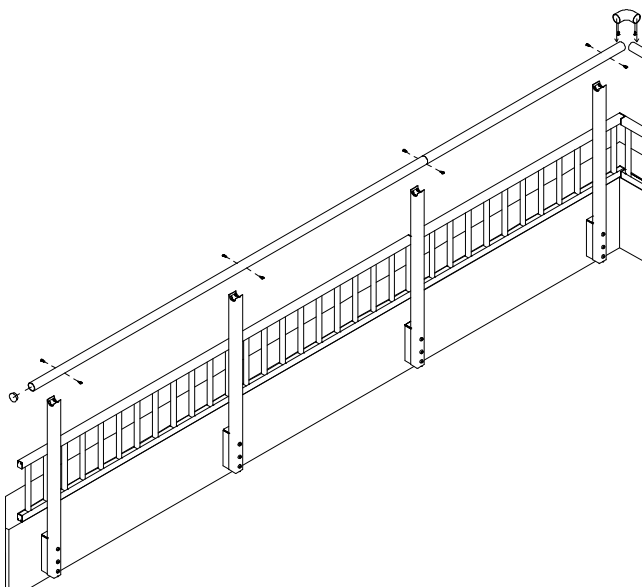


2 screws per column; in case of handrail continuation, the connection is made with rivet.

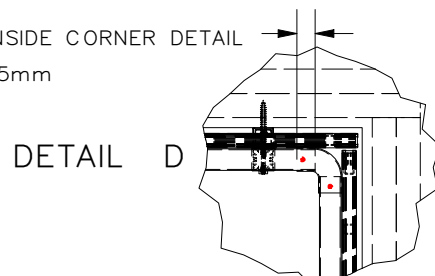
Note that CHS handrail is fastened with self-drilling screws from both sides.

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



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

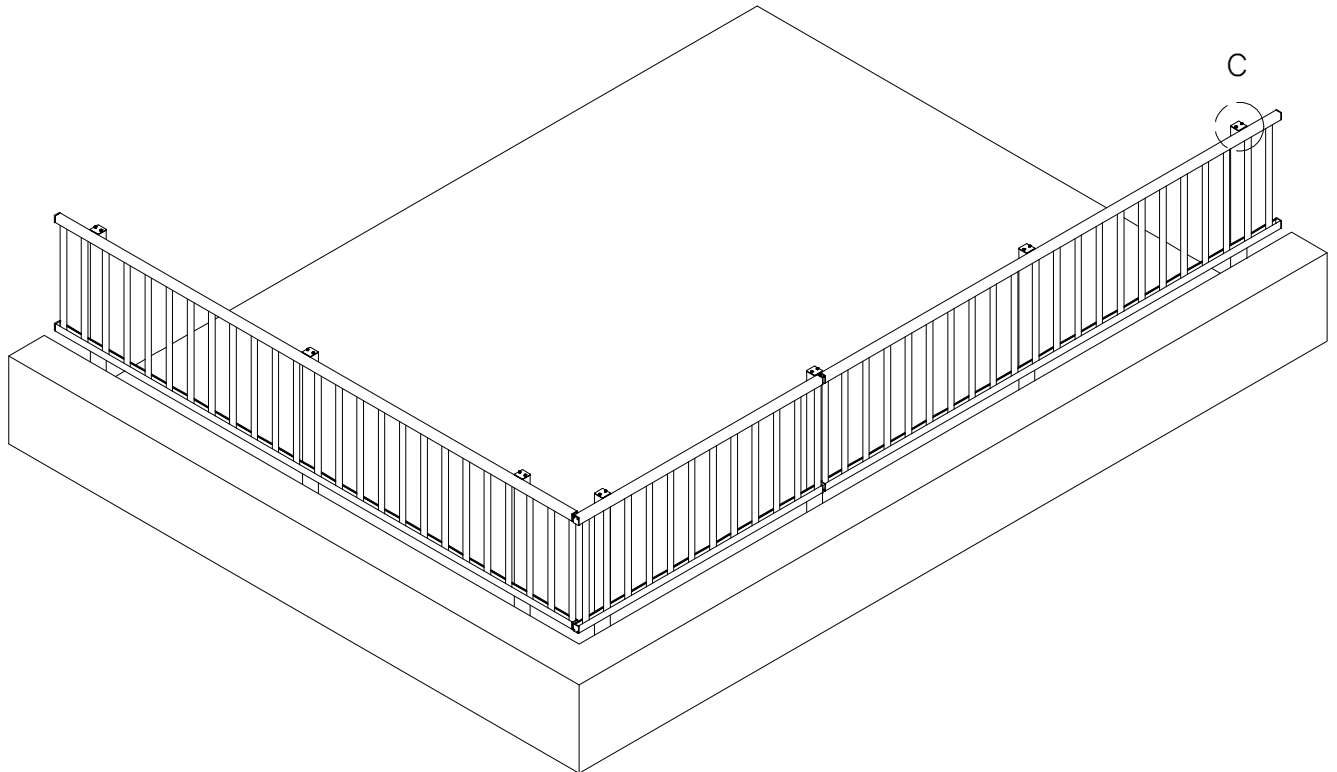
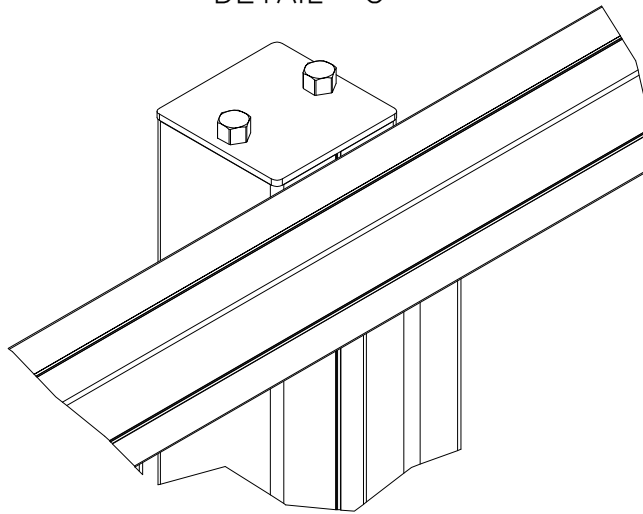
### ROUND HANDRAIL CORNER.

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 6. CUT AND FIX THE HANDRAIL

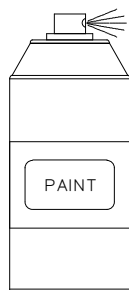
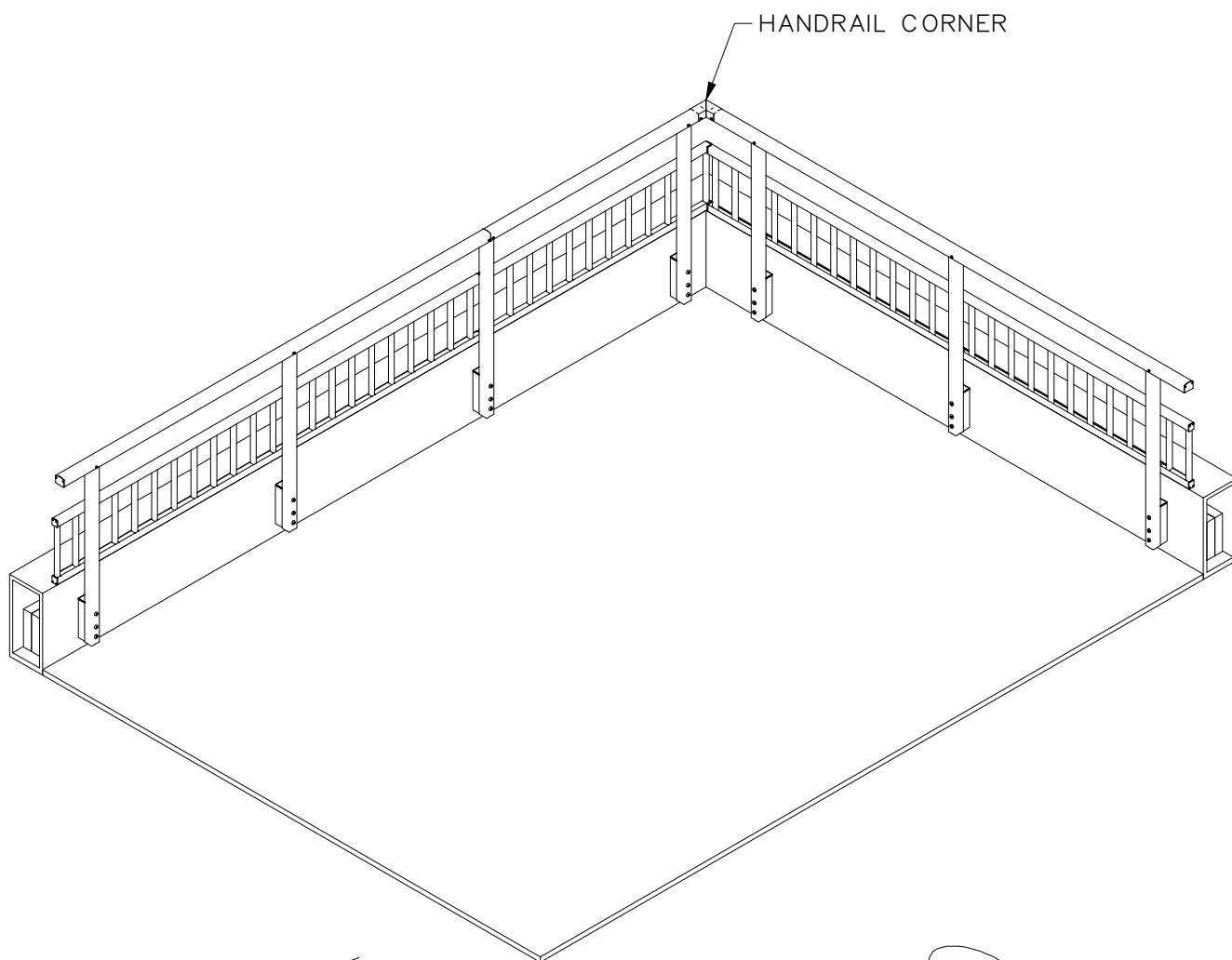
This option does not have a handrail, instead it has 2x46x46mm endplates fastened with self drilling screws to the top of the columns.

DETAIL C

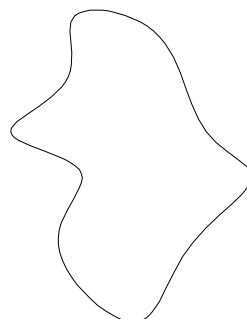


## STEP 7. FINISH THE BALCONY ASSEMBLY

- 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

**Enjoy your new Innore railing and stay safe!**  
Designed for safety, built to last.

Thank you for choosing Innore railing systems – Your Innore railing is designed and manufactured in Estonia with a focus on safety, durability, and timeless design.

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:

Email: [info@innore.ee](mailto:info@innore.ee)

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

We're here to help you keep your railing safe, beautiful, and long-lasting.  
Stay safe – and enjoy your view!

