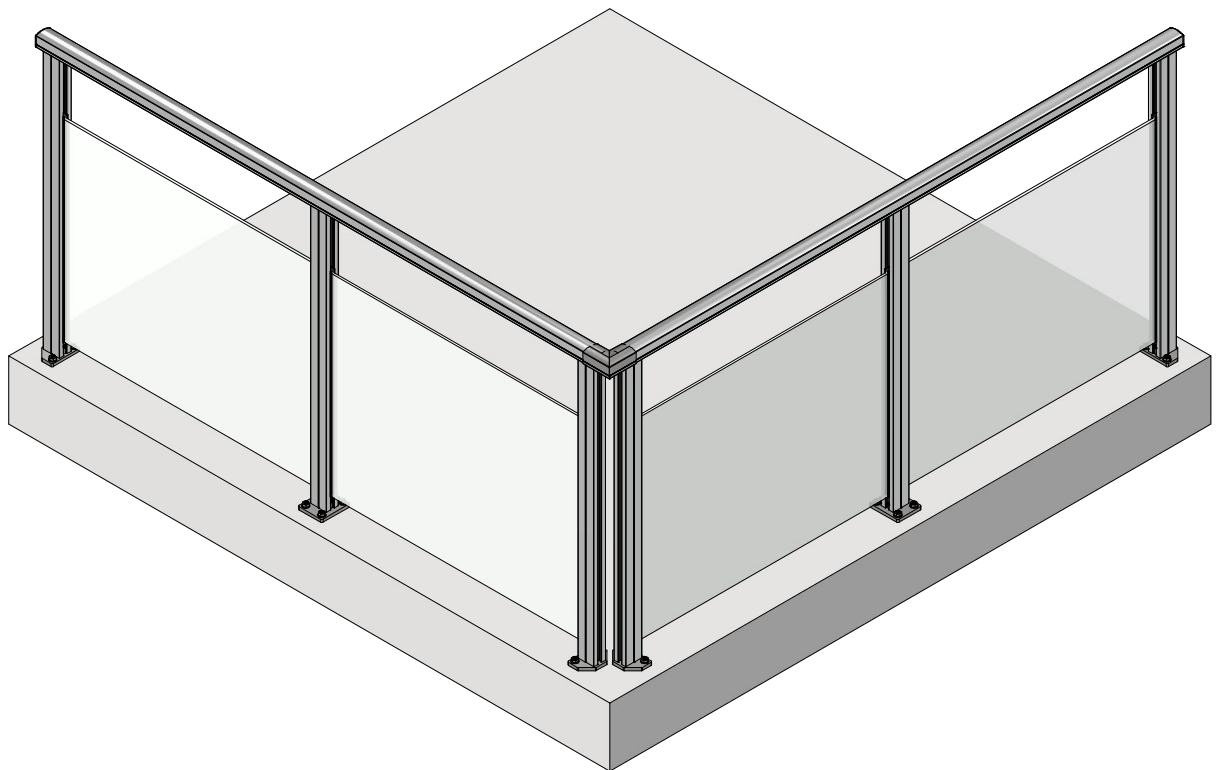
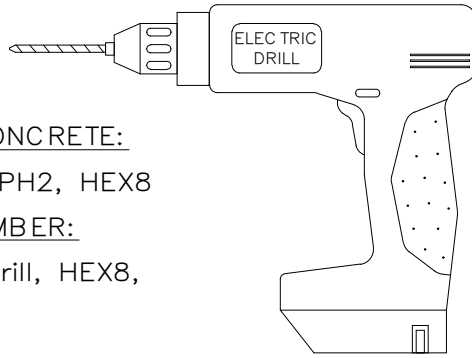


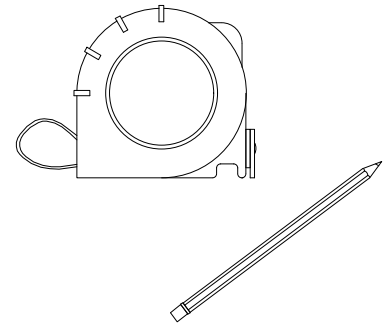
BALCONY RAILING
BERGEN
TOP
MOUNTED
INSTALLATION MANUAL



NECESSARY AND ADDITIONAL HELPFUL ITEMS FOR INSTALLATION:

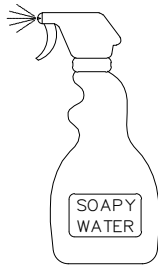


Drillbits for CONCRETE:
 SDS plus M8, PH2, HEX8
 Drillbits for TIMBER:
 Ø6mm wood drill, HEX8,
 TX40, PH2

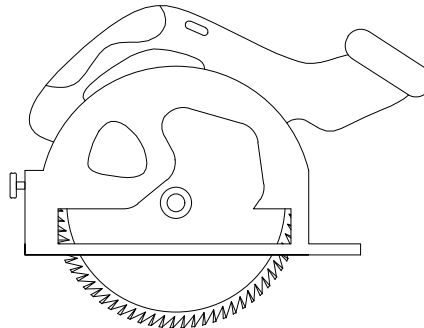


Measuring tape & pencil

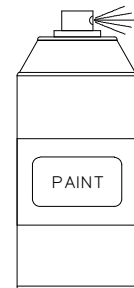
Electric drill for TIMBER
 Hammer drill for CONCRETE



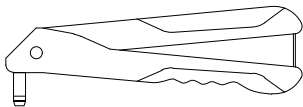
Soapy water spray
 (Optional)



Angular saw
 cold cut



Repair paint
 (Optional)



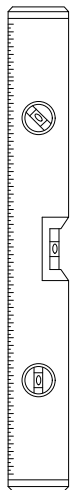
Riveting pliers



CAUTION

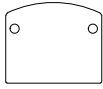
READ THE WHOLE INSTALLATION MANUAL BEFORE STARTING.

- It is easy to scratch and/or break glass panels, handle with care, use cut resistant gloves.
- 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. Glass railings are heavy in weight and bear a lot of wind due to a large surface area.
- Safety is number one priority when dealing with heights, always use personal protective equipment.

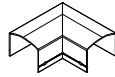


Level

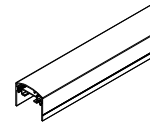
LIST OF DIFFERENT COMPONENTS:



Handrail 51X43 endplate



Handrail 51X43 corner



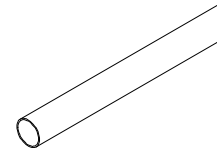
Handrail 51X43



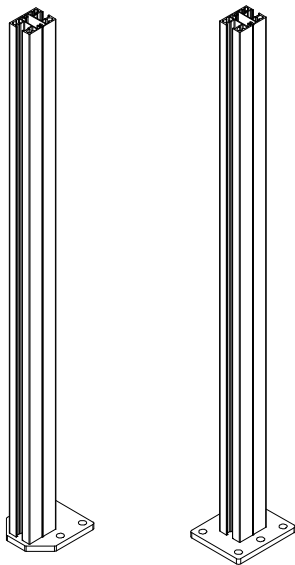
Handrail 42,4X2 endcap



Handrail 42,4X2 corner

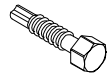


Handrail CHS 42,4X2



Edge and center column with timber base plate

Without handrail endplate, on top of column



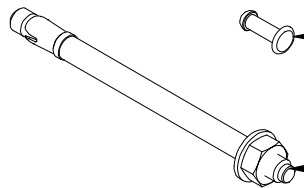
Self-drill screw, fastening column endplate under the column



Self-drill screw for handrail fastening



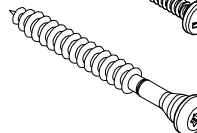
Rivet, fastening 51x43 endplates and Holmenkollen endplates on top of column



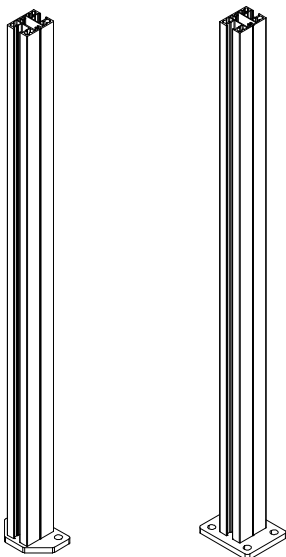
Expansion anchor HSA-R w. washer and nut



Self-drill screw for fastening 15x15 inside column



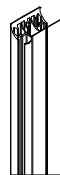
HBSPL EVO screw w. M12 A4 washer, connecting column to timber



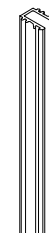
Edge and center column with concrete base plate



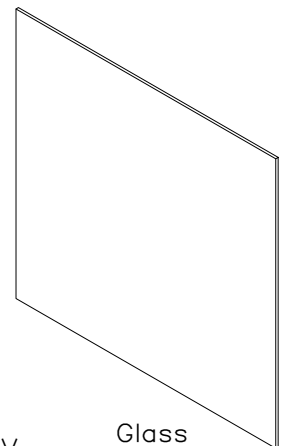
15X15 Inlay with plastic cap



Milled end of railing for 42,4x2 handrail



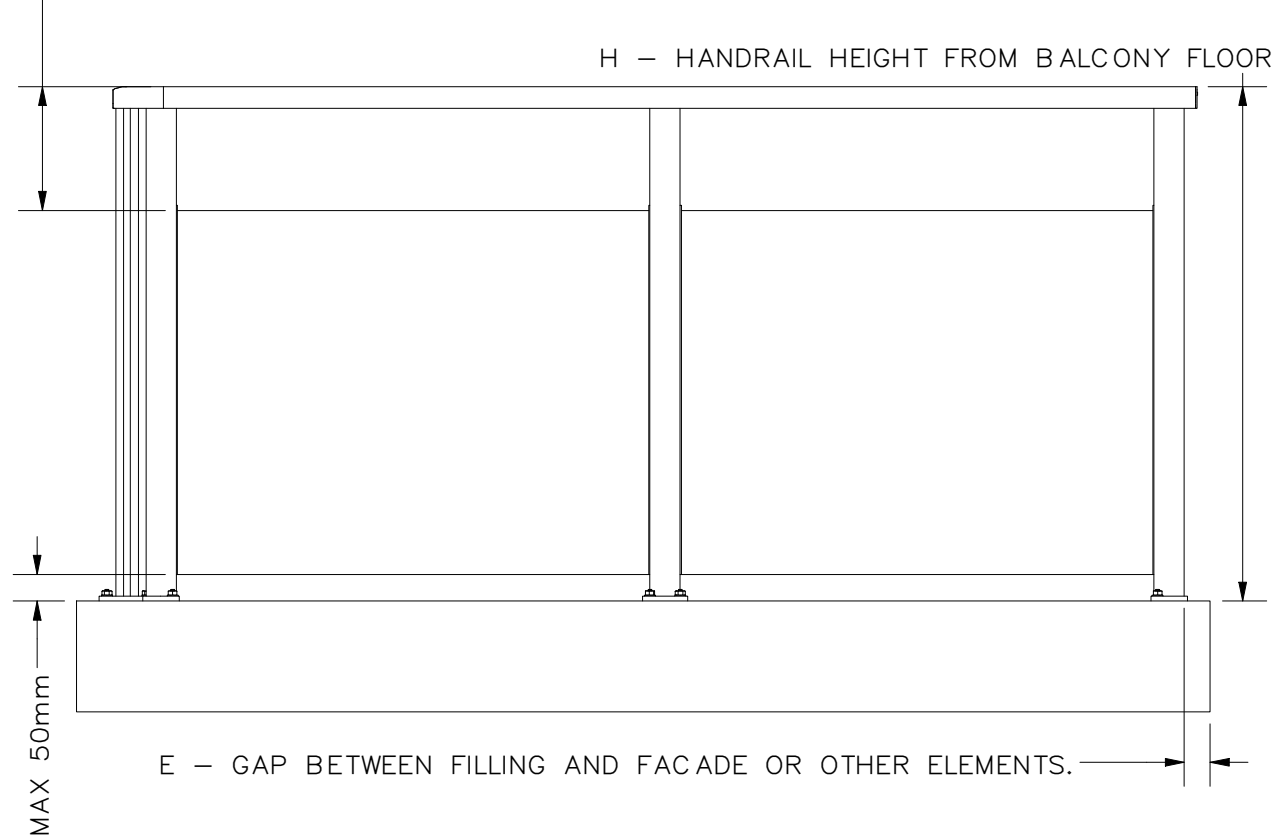
Glass seal, TPV



Glass

OVERALL REGULATIONS

MAX G – FROM UNDER THE HANDRAIL TO THE EDGE OF GLASS



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 glass height.
2. Add the height of the gap you are leaving.
3. Add the glass height.
4. 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)

The sum of these values gives you the column height.

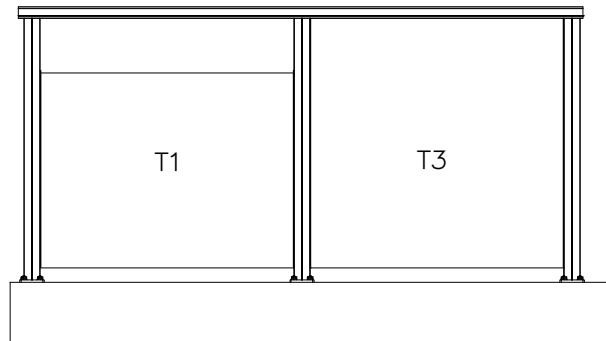
If your balcony floor is raised (not at the same level as the column fixing point), measure the maximum gap (up to 50mm) from that surface and adjust accordingly.

	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 of glass

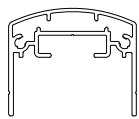
HANDRAIL AND GLASS LENGTH OPTIONS FOR BOTH BASE STRUCTURES – CONCRETE & TIMBER

GLASS CHOICE

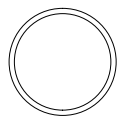
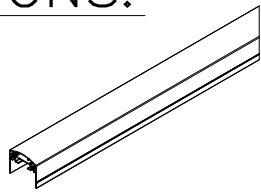


HANDRAIL CHOICE IS DEPENDANT ON GLASS CHOICE.

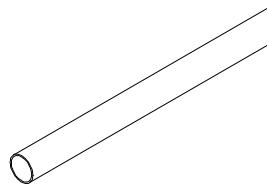
T1 OPTIONS:



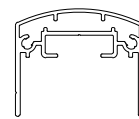
Handrail 51X43



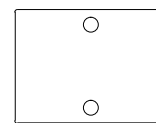
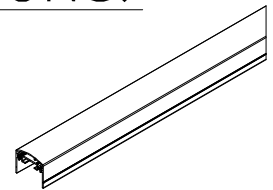
CHS 42,4X2



T3 OPTIONS:



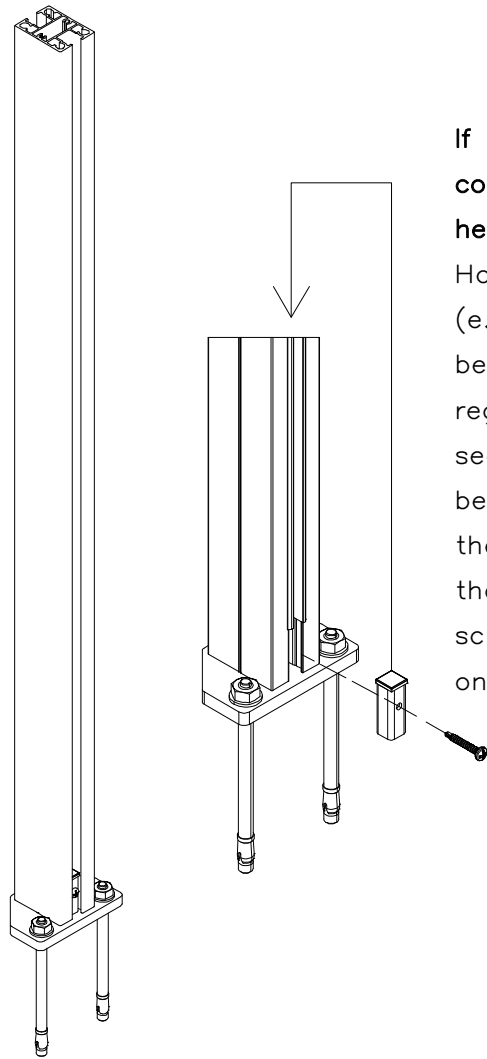
Handrail 51X43



Endcap on top of the column
(HOLMENKOLLEN)

SEE STEP 5 FOR FURTHER INFORMATION
ABOUT DIFFERENT TYPES OF HANDRAILS.

EXTRA INSTALLATION STEPS ARE NEEDED FOR PARTS ORDERED SEPARATELY



If the column has been ordered through the system configurator, the inlay position is pre-set at the correct height and no adjustment is required.

However, if the column has been purchased separately (e.g. without full system configuration), the inlay must be positioned inside the column according to the regulations specified for your country (see relevant section of this manual). In this case the inlay has to be positioned at the bottom of the column. Remove the TPV seal, if necessary, to slide in the inlay, after that put it back. The inlay is fastened with self-drilling screws and includes a plastic cap for the glass to rest on.

Glass seal, TPV

Cut the seal to glass length + 5mm.



STEP 1. CALCULATE DESIRED COLUMN

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

Note the glass lengths you have.

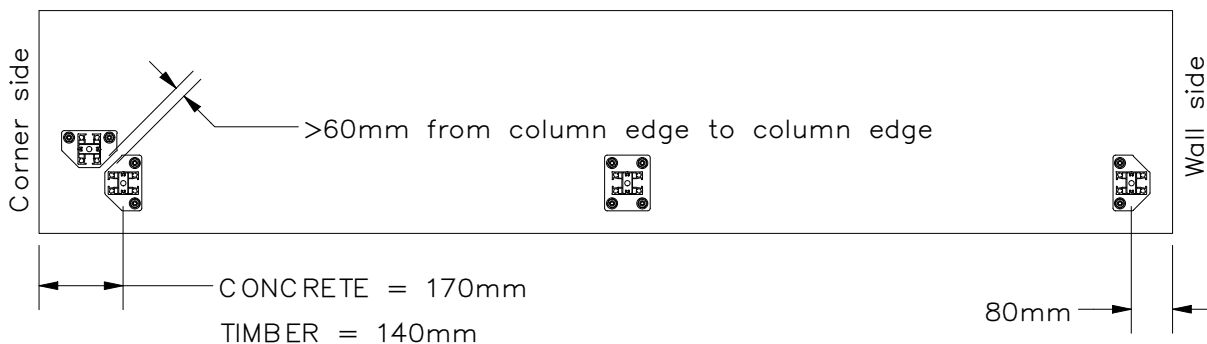
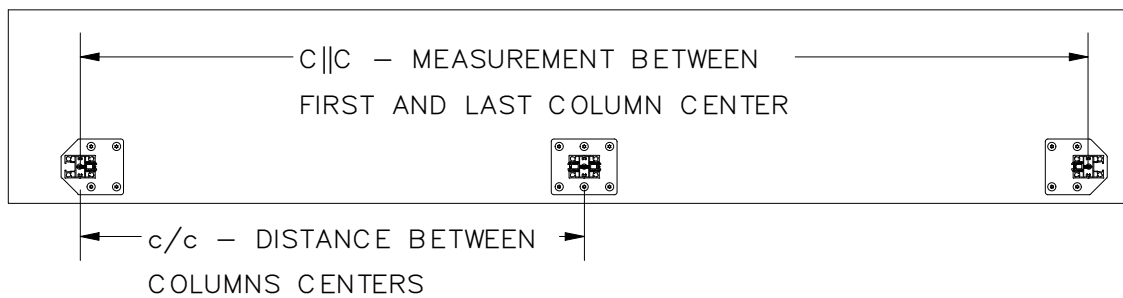
c/c measure must be 29mm±2mm longer than glass length.

MAX. RECOMMENDED c/c IS 1100mm.

Consult with a structural engineer when railing is placed in a windy region or fastening conditions are complicated.

STEP 2. MARK THE DRILL HOLES TO BALCONY

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.

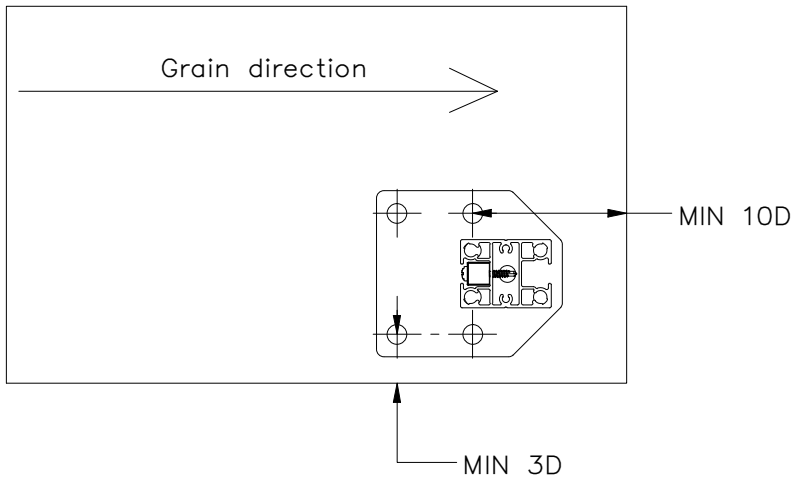
Otherwise there might not be enough space for CHS handrail corner detail installation.

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.

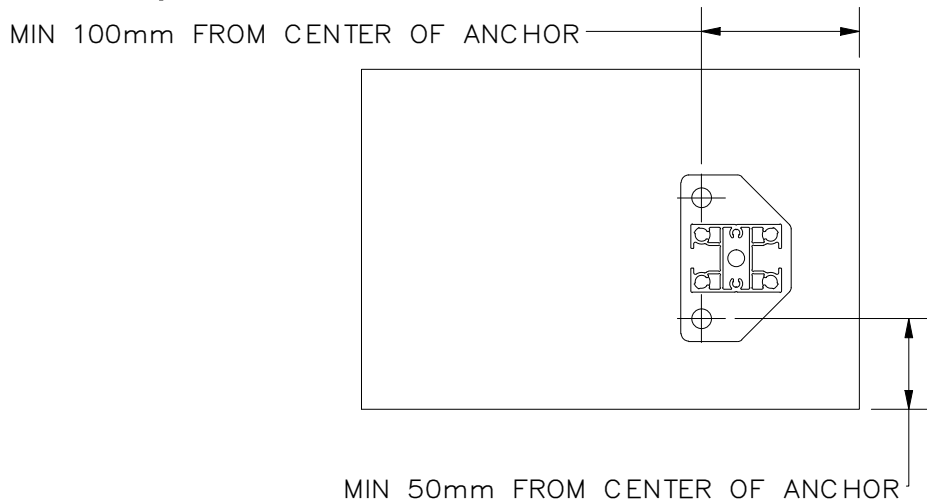
Top mounted timber – minimum 10D from center of the screw to the edge of balcony.

D = fastener diameter. Ø10 has to have 100mm from edge.



1. Baseplate has holes in it, mark the center points of the holes.

Top mounted concrete – minimum 50mm with M8 expansion anchors from the edge of balcony.



1. Use the anchor center distance from the edge to get the correct measurement.
2. Mark the center points of the holes.

TIMBER



ROTHOBLAAS HBS
PLATE EVO SCREW
DATASHEETS AND
INFORMATION

CONCRETE



HILTI HSA-R WEDGE
ANCHOR
DATASHEETS AND
INFORMATION

INNOR

PRODUCT:
BERGEN TOP

SHEET NAME:
MEASUREMENTS – TOP MOUNTED

DATE:

PAGE:
8

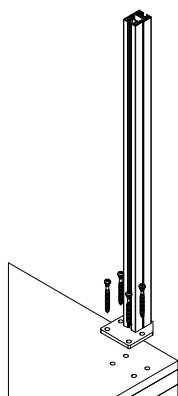
VERSION:

FORMAT:
A4

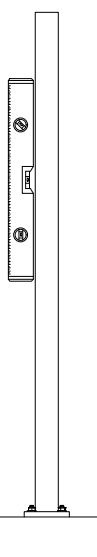
STEP 3. DRILL THE HOLES AND FASTEN THE COLUMNS

TOP MOUNTED TIMBER

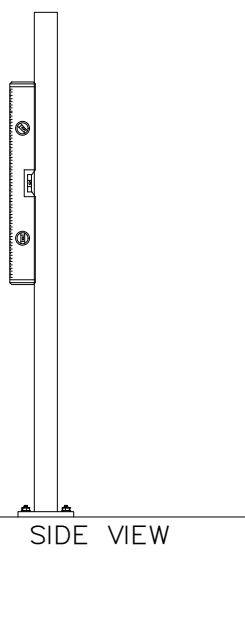
1. Predrill $\varnothing 6$ holes.
2. *In case you are going through waterproof layer, use roof sealant before fastening.*
3. Fix base plate with column to base structure with correct fasteners according to project.
4. Before final tightening, level the columns.
5. Check that the column is securely fixed.
6. Proceed with the installation of the remaining columns.



FASTEN COLUMN WITH BASE PLATE WITH CORRECT FASTENERS



FRONT VIEW

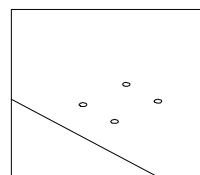


SIDE VIEW

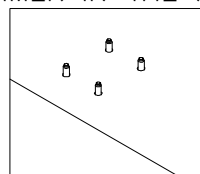
TOP MOUNTED CONCRETE

1. Mark the drill bit with a marker to set the correct drilling depth (min. 85 mm for expansion anchor).
2. Drill $\varnothing 8$ mm holes.
3. Clean the holes with a vacuum cleaner.
4. Hammer the anchors into the drilled holes.
5. Place the column with the base plate onto the anchors.
6. Make sure the column is correctly positioned, use a level.
7. Tighten the nuts by hand first, then use a wrench (this expands the bottom part of the anchor).
8. Check that the column is securely fixed.
9. Proceed with the installation of the remaining columns.

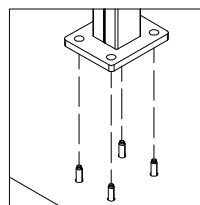
DRILL THE HOLES



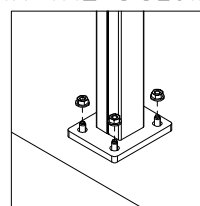
HAMMER IN THE ANCHORS



PLACE COLUMN ONTO ANCHORS



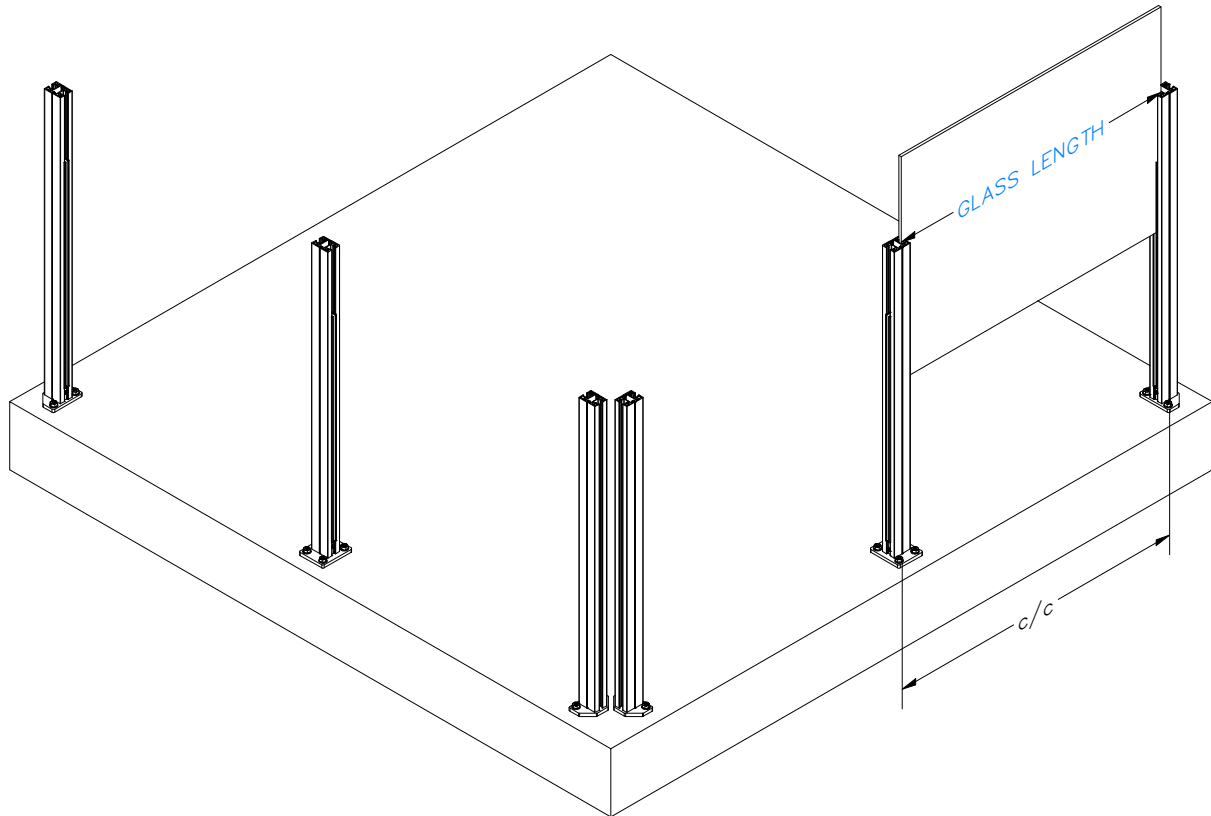
FIX THE COLUMNS



STEP 4. INSTALL GLASS BETWEEN COLUMNS

CHECK GLASS MEASUREMENTS, REMEASURE COLUMN SPACING TO MAKE SURE THAT GLASS FITS BETWEEN COLUMNS.

c/c, from the centre of column, measure must be 29mm \pm 2mm longer than glass length



GLASS PANEL INSTALLATION GUIDE

NB! USE GLOVES WHILE HANDLING THE GLASSES. USE OF THE SUCTION CUPS ARE RECOMMENDED FOR LIFTING THE GLASSES.

1. Use soapy water for sliding glasses into place. Spraying the seals is the easiest and preferred method.
2. Gently lower the panel to its designated slot. While doing that, make sure that the seal does not wrinkle. Also make sure that the glass is lowered simultaneously from each side so it does not go diagonally between the posts, which prevents sliding. It is **recommended to have an assistant** for this step. Glass panels tend to be heavy and react to stronger wind gusts. Having a helping hand will make this safer and easier for you and the glass panels.
3. There are aluminium inlays with plastic caps inside the column for glass panels to rest on. Check again that the glass seal is neatly lodged in its place, lower the glass until it reaches the top of the inlay cap and move on with the next glass panel.
4. Wipe the excess soapy water with cloth if necessary.

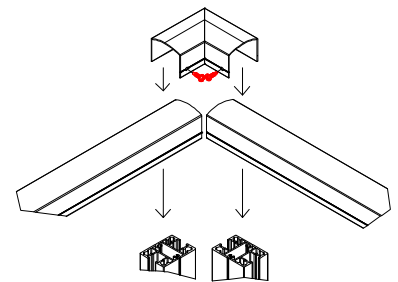
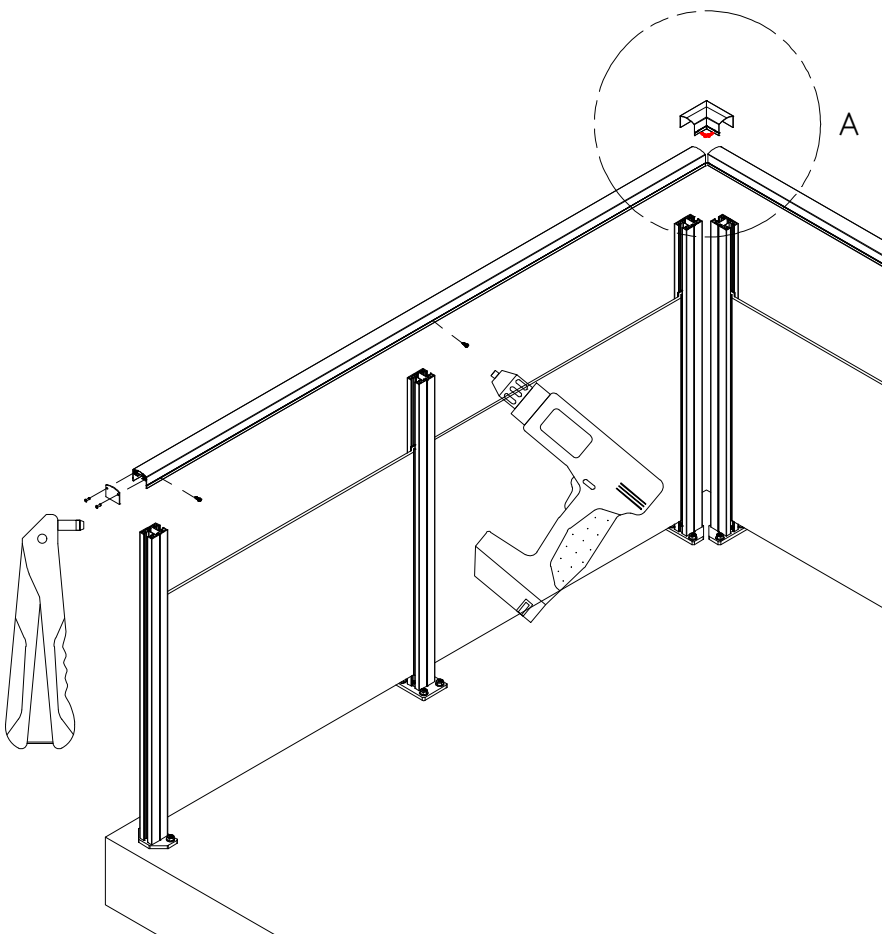
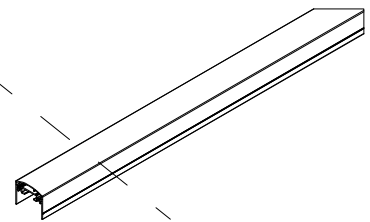
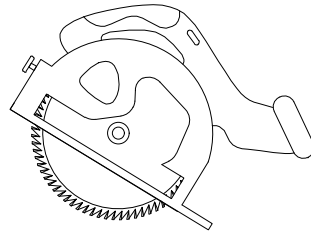
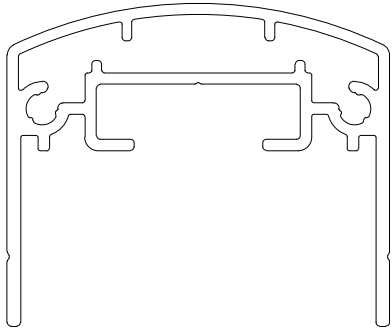
STEP 5. CUT AND FIX THE HANDRAIL

Cut the handrail to desired length.

Fasten handrail to columns using self-drilling screws.

Optional endplates are installed with rivets.

HANDRAIL 51X43



DETAIL A

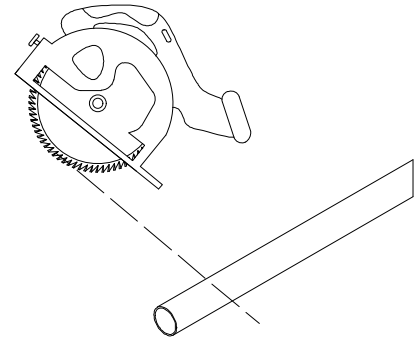
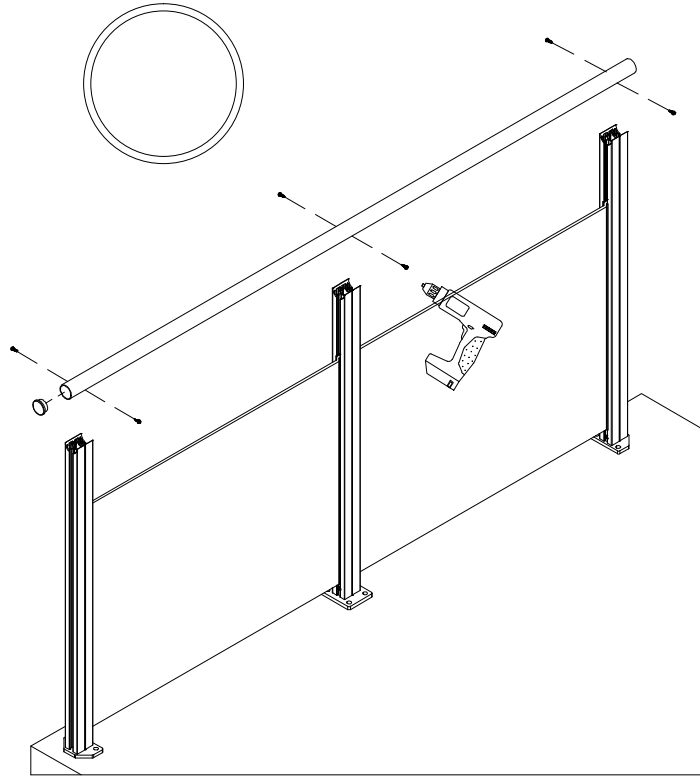
The corner piece is fastened to the handrail with self drilling screws. In case the corner piece overlaps a column, secure both the corner and the handrail to the post by the same screw.

STEP 5. CUT AND FIX THE HANDRAIL

Cut the handrail to desired length.

Fasten handrail to columns using self-drilling screws.

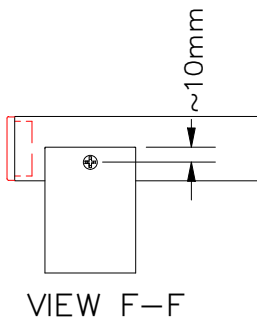
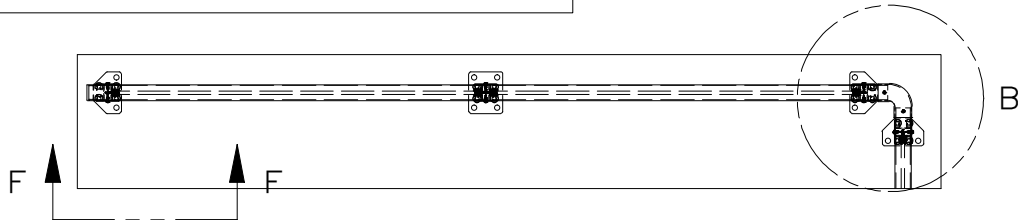
CHS 42,4X2



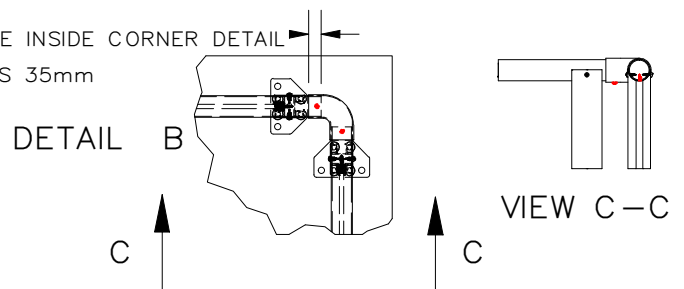
Note that CHS handrail is fastened with self-drilling screws from both sides.

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.

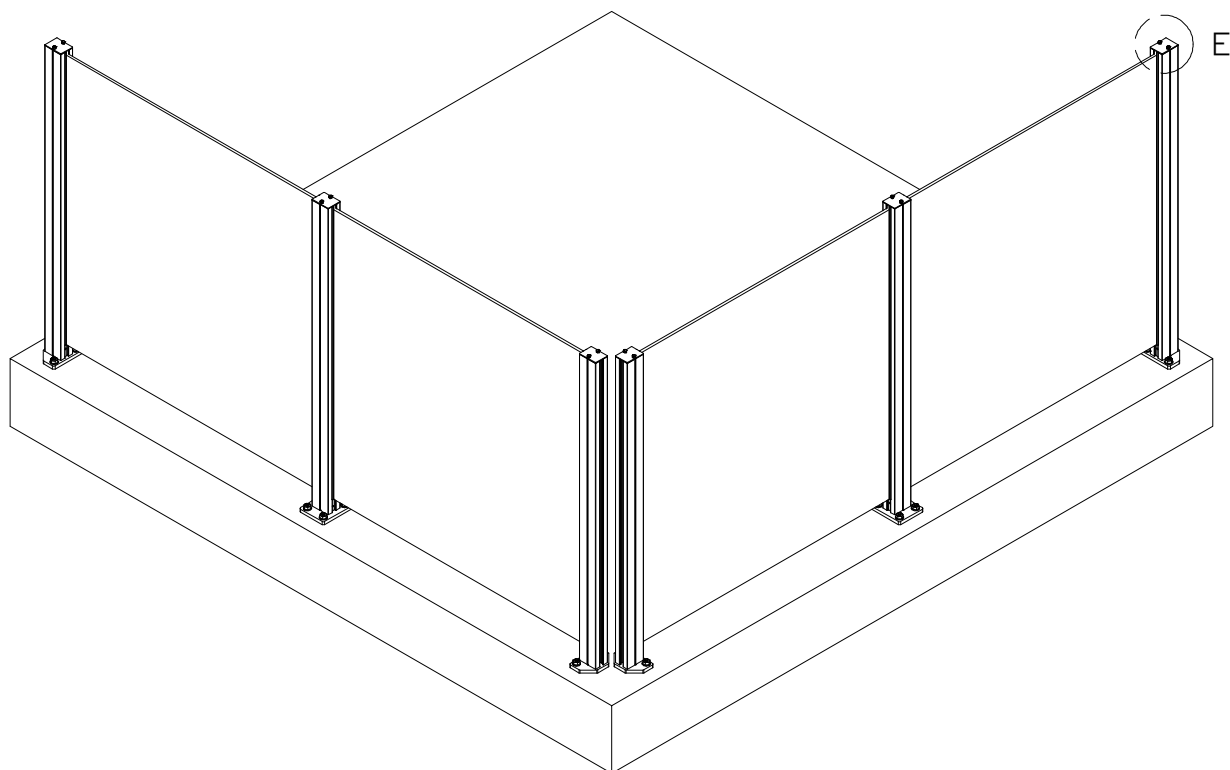
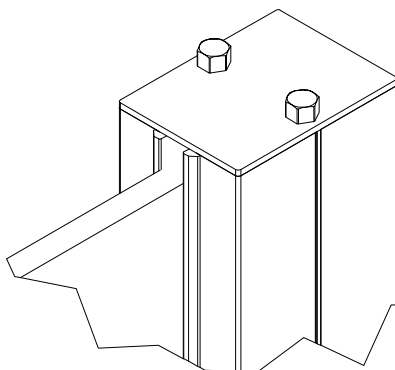
The red-marked screws are used to fasten the corner detail to the handrail. Leave enough room between the handrail end and the column to allow access for the screw underneath or from side.

STEP 5. WITHOUT HANDRAIL

HOLMENKOLLEN

This option does not have a handrail, instead it has 2x45x60mm endplates fastened with self-drilling screws to the top of the columns.

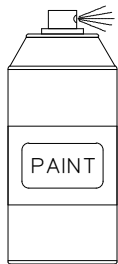
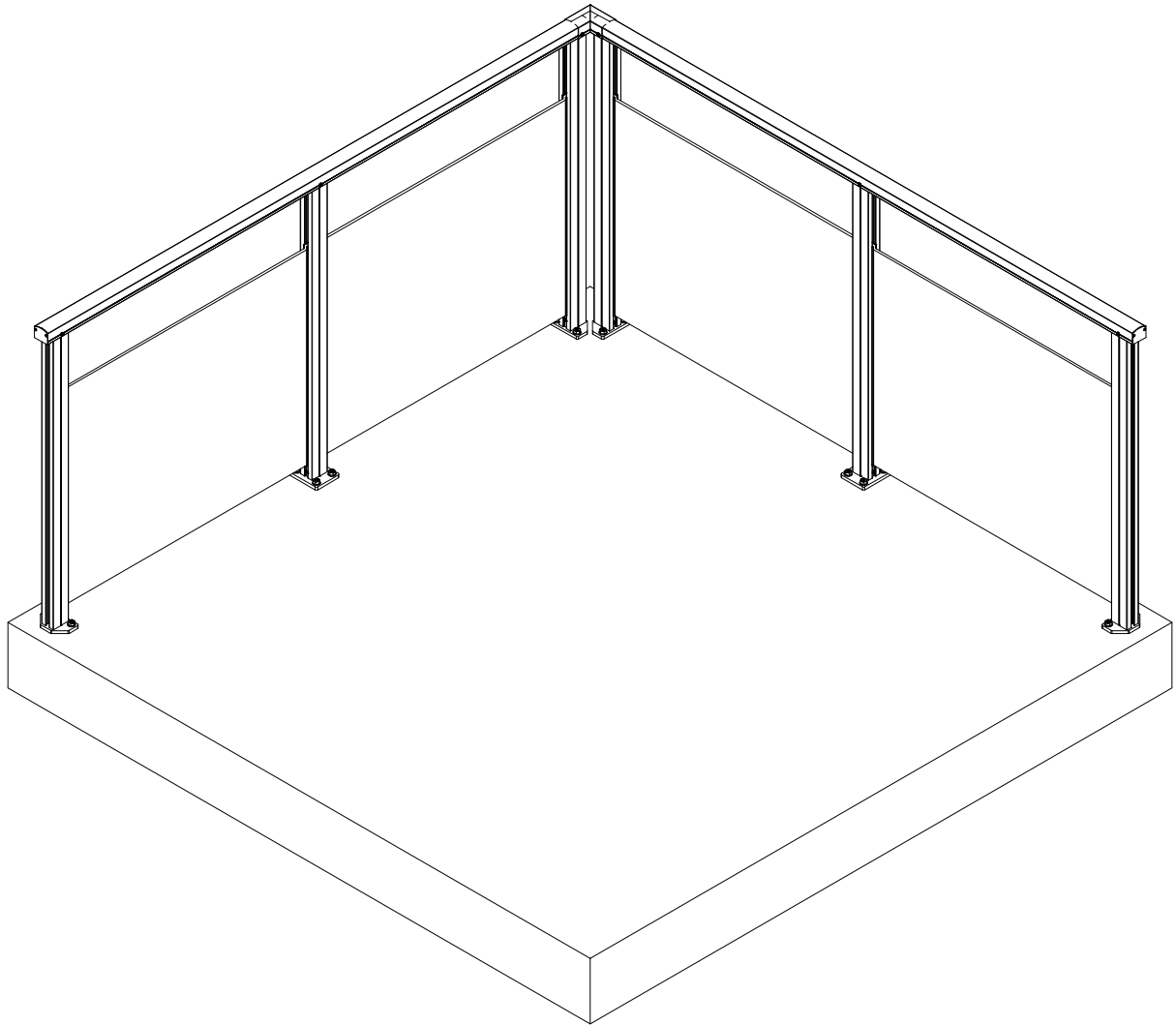
DETAIL E



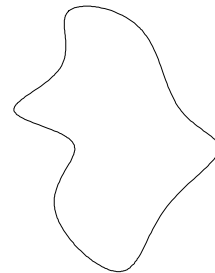
STEP 6. FINISH THE BALCONY ASSEMBLY

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

Website: www.innore.eu

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

