

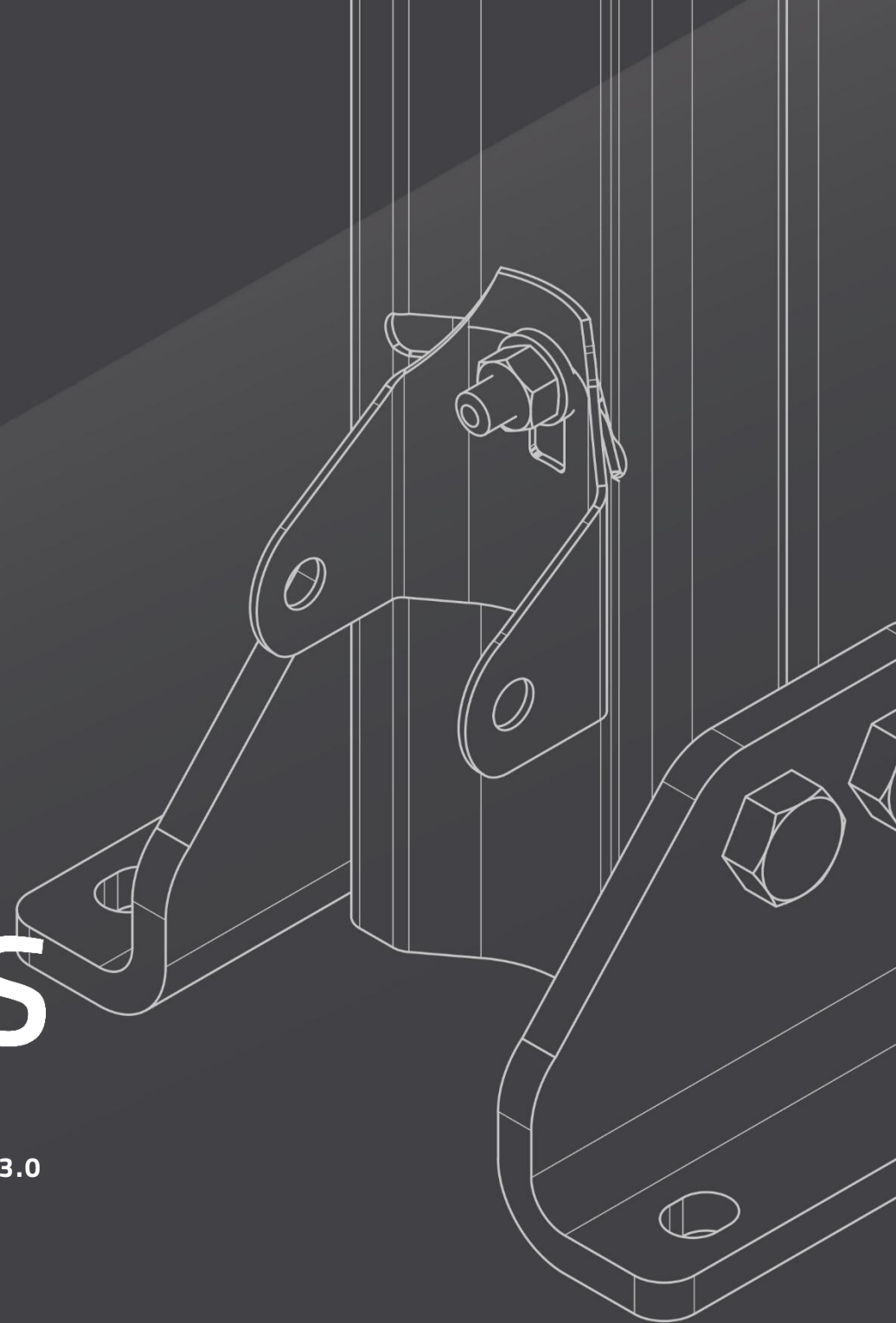


Patented System

RAILY DRS

INSTALLATION BOOKLET

DRS URBAN PRO 1.5 | DRS URBAN PRO 2.0 | DRS URBAN PRO 3.0



1.	Product	1
2.	DRS URBAN PRO Component List	2
2.1	Pre-assembled Pole.....	3
2.2	Pre-assembled Module.....	4
2.3	Start and End Pole of the Section	5
3.	Function	5
4.	Installation.....	6
	>>>	
5.	Inspection and Maintenance.....	12
6.	Restoration and Durability.....	13
7.	Normative References	13
8.	Handling, Transport, and Safety	13
9.	Warranty	13

4.	Installation.....	6
4.1	Tools Required for Installation	6
4.2	Tightening Torque Table	6
4.3	Installation Steps	7
4.3.1	Positioning the First Pole	7
4.3.2	Aligning the Pole Vertically.....	7
4.3.3	Connecting the Pole to the Structure	8
4.3.4	Bolt Tightening.....	8
4.3.5	Mounting the Module.....	9
4.3.6	Positioning the Second Pole	10
4.3.7	Connecting the Module to the Second Pole.....	10
4.3.8	Attaching the Second Pole to the Structure	10
4.3.9	Pole-to-Module Connections	11
4.3.10	Curves and Angles up to 90°	11
4.3.11	Height Adjustment.....	12

1. Product

The adaptable **Raily DRS URBAN PRO** guardrail system is designed to serve as fall protection on bridges and pedestrian paths, as a boundary element for sidewalks and cycle paths, as well as a dividing or decorative feature in urban environments.



Main Advantages

No preliminary site inspections are necessary, as the RAILY DRS URBAN PRO system easily adapts to slopes up to 17° and angles up to 90°, always ensuring perfect alignment with the structure

Simple, fast, and intuitive installation - No welding required

The system can be dismantled and reinstalled on new concrete structures, even those with completely different slopes or angles from the previous site

Quick and easy replacement of components, resulting in significant savings in time and site costs

Serial industrial production ensures maximum quality, consistency between the pre-assembled components, and fast delivery

Certified in accordance with NTC 2018 Technical Construction Standards and compliant with classes of UNI CEN 1317-6

2. DRS URBAN PRO Component List

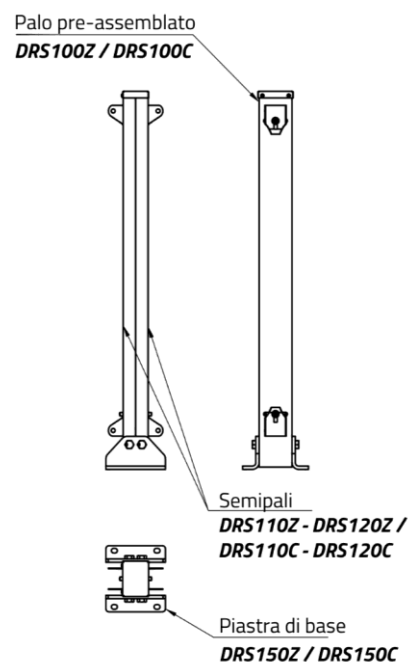
Code	Description	Quantity / Module	Material – Quality
DRS100Z / DRS100C	Pre-assembled pole	1	S355MC, S355JoWP
DRS110Z / DRS110C	Intermediate pole	1	'
DRS120Z / DRS120C	Int. pole with additional bracket	1	'
DRS130Z / DRS130C	Cap	1	'
DRS140Z / DRS140C	Rotation profile	4	'
DRS150Z / DRS150C	Base plate	2	'
DRS200Z / DRS200C	Pre-assembled module	1	S355MC, S355JoWP
BOLT SET	Hex bolt M10 x 80	4	8.8
	Flanged nut M10	4	8.8

Note: To ensure the load-bearing capacity of our products, proper anchoring is essential. The anchoring system must be selected by the designer or a qualified installer, in compliance with the project specifications and the site conditions.

Anchors to the underlying structure are **never included** in the supply.

2.1 Pre-assembled Pole

The pole can be vertically adjusted by sliding the two half-poles against each other until the final position is reached. The assembly is then fixed using 4 M16 bolts, which connect the **base plate** (consisting of two L-shaped plates) to the intermediate-poles.

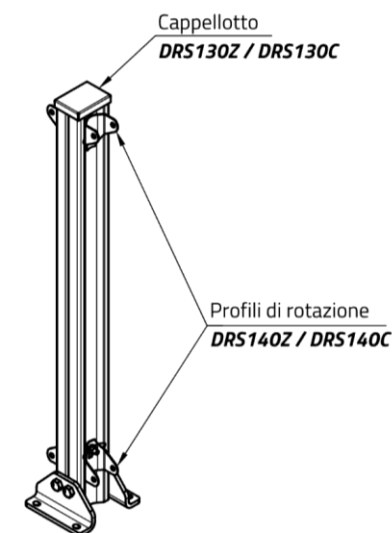


The **cap or pole cover** always remains vertical, as it is fixed with self-tapping screws to only one side of the half-pole, precisely where the dedicated fixing holes are located.

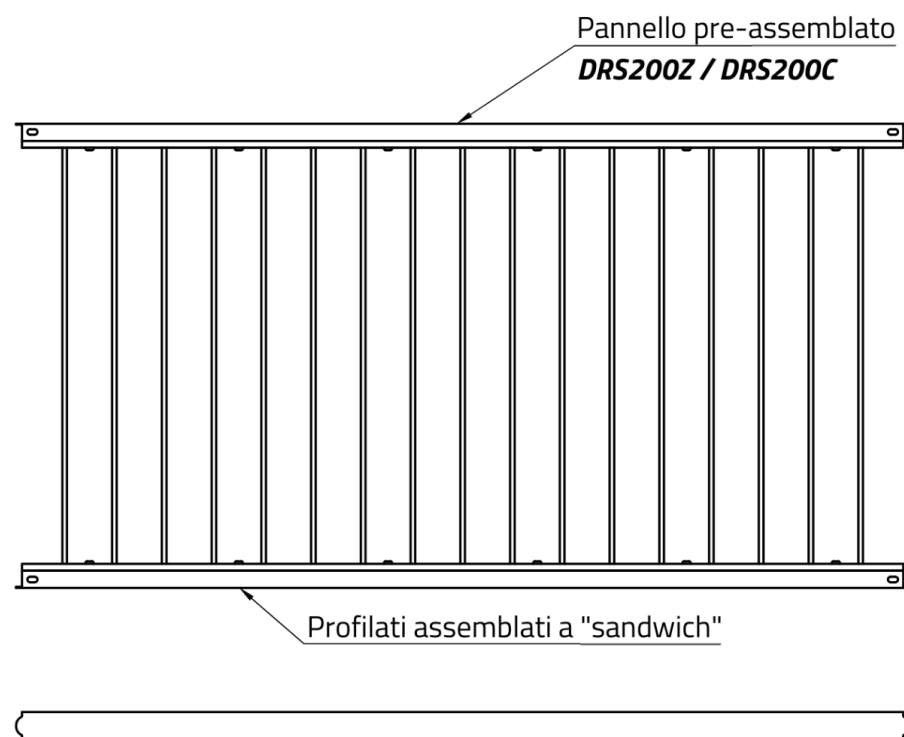
The **rotation profile** allows for adjustment of the module height relative to its connection on the pole.

This adjustment is particularly useful to align the handrails along sections of guardrail installed on slopes, if necessary.

Moreover, the inclination of the pole can also be adjusted even after the rotation profile has been installed.



2.2 Pre-assembled Module



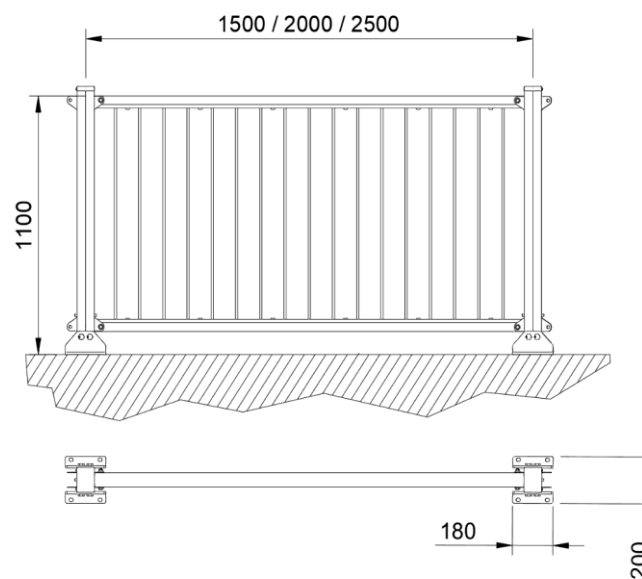
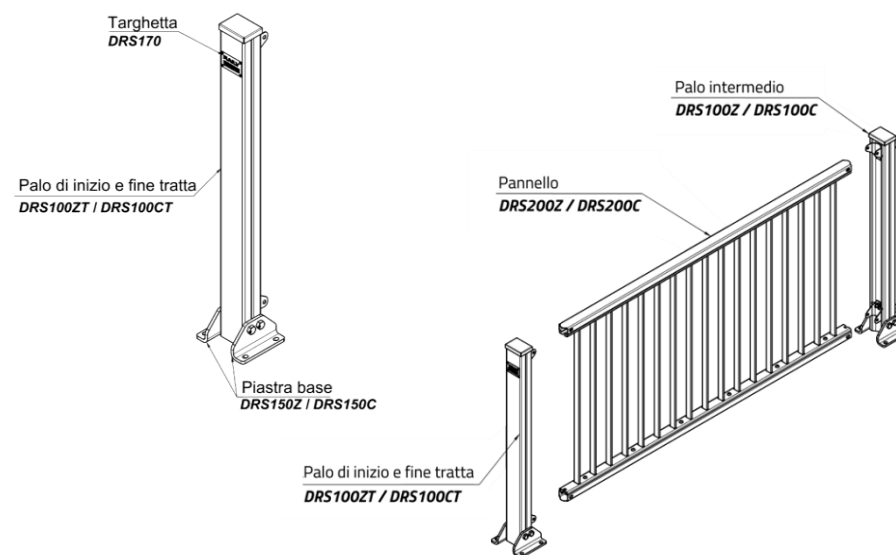
The module is designed to allow an inclination of approximately 17° , while keeping the bars perfectly vertical. It is delivered pre-assembled and correctly pre-tensioned, ready to be positioned at the desired angle. The bars are securely fixed within the sandwich structure of the module. The 30 x 10 mm bars inside the module cannot be removed unless the module and its profiles are completely disassembled.

2.3 Start and End Pole of the Section

Each section of the guardrail must begin and end with a terminal pole, a component specifically designed to define the boundaries of the section. This component is closed on one side and does not include any connections for fixing the module. The use of this component is mandatory to ensure the safety of the installation, preventing exposed edges and guaranteeing a clean and orderly finish to the system.

3. Function

The **DRS URBAN PRO** guardrail range includes three models, each with different load capacities to meet a variety of performance requirements. The system consists of pre-fabricated modules in standard lengths of 1.5 m, 2 m, and 2.5 m, designed to accommodate inclinations of up to 17°. The system is also equipped with a **rotation profile** that connects the module to the pole, allowing for the creation of angles up to 90°, thus providing excellent adaptability to complex configurations. The modular design, combined with joints at both the ends of the modules and on the individual poles, allows for flexible and secure installation in a wide range of configurations and application contexts.



4. Installation

4.1 Tools Required for Installation

 Screwdriver / Impact Driver	T.1
 Drill	T.2
 Concrete drill bit (according to type of anchor)	T.3
 6 mm Allen key	T.4
 17 mm and 15 mm open-end wrench	T.5
 Ratchet with 17 mm and 15 mm socket	T.6
 Spirit Level	T.7
 Measuring tape	T.8
 Compressed air pump for cleaning holes	T.9
 Anchors	T.10
 Torque wrench for controlled tightening	T.11
 Chalk line or tracing cord	T.12

4.2 Tightening Torque Table

Thread Size	Tightening Torque
M10 hex head	45 Nm
M16 hex head	150 Nm

4.3 Installation Steps

Warning: The bolts connecting the base plate to the half-poles are supplied loose and must always be pre-tensioned during installation.

4.3.1 Positioning the First Pole

Place the start pole at the defined starting point (see photos A and B), with the closed side facing outward from the installation.



A



B

4.3.2 Aligning the Pole Vertically

To ensure the pole is perfectly vertical and adapted to any existing site slopes (see photo C), use a spirit level (T.7, see photo D). It is also standard practice to trace the installation line with a chalk line starting from the first pole.

The base plate bolts are supplied loose and must be pre-tensioned after aligning the pole vertically. This step is crucial for the correct positioning of the connection holes to the concrete kerb.



C



D

4.3.3 Connecting the Pole to the Structure

Depending on the type of anchoring chosen, it is recommended to follow the specific anchor installation manual. **Ensure that the base plates are in full contact with the pole** to guarantee the correct position of the holes and avoid any misalignment.

4.3.4 Bolt Tightening

Tighten the bolts according to the torques specified in section 4.2 - Tightening Torque Table (see photo E).

This operation must also be performed even if the poles are already vertically aligned (e.g., when installed on a flat concrete kerb).

Always check vertical alignment with a spirit level during this step (see photo F).



E



F

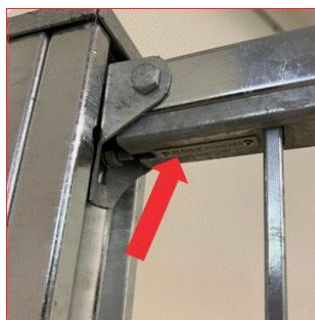
Tightening Torque Table

Thread Size	Tightening Torque
M10 hex head	45 Nm
M16 hex head	150 Nm

4.3.5 Mounting the Module

Now take the pre-assembled module, **paying attention to its orientation**; the traceability tag must be positioned on the underside of the upper handrail (photo G). Position the module by **first** aligning the holes on the **lower** rotation profile (photo H) with the lower handrail. Then insert the two M10 x 80 mm screws connecting the pole to the module as follows: Photo I – **First insert the lower screw**. Photo J – Apply slight downward pressure on the upper handrail to align the holes between the upper handrail and the **upper** rotation profile, then insert the second M10 x 80 mm screw.

Attention: Ensure the rotation profile is securely attached to the pole to prevent any later spacing errors between the poles.



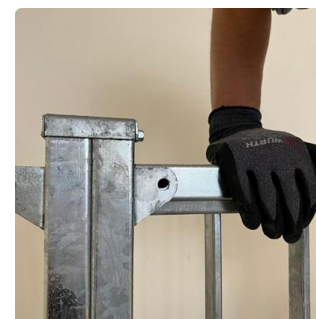
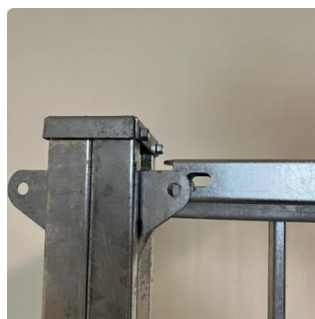
G



H



I



J



4.3.6 Positioning the Second Pole

Now position the second pole, which will connect to the next pre-assembled modules, and repeat the vertical alignment procedure as described in section 4.3.2

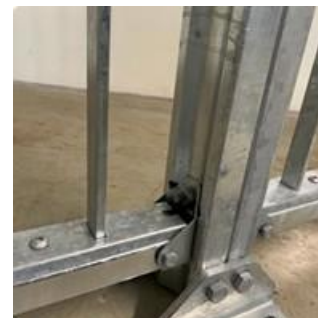
4.3.7 Connecting the Module to the Second Pole

Repeat the assembly sequence as described in section 4.3.5

Attention: Do not pre-tension the screws yet.

4.3.8 Attaching the Second Pole to the Structure

Fix the second pole to the structure as described in section 4.3.3



4.3.9 Pole-to-Module Connections

Pre-tension all screws connecting the **pole to the module** (4 x M10x80 bolts) using a **torque wrench** (see photos K and L, T.11), applying the tightening **torque specified** in **table 4.2**. Only use the supplied bolt sets.



K



L

4.3.10 Curves and Angles up to 90°

Attention: The module must already be connected.

Attention: Keep the screw heads on the inside of the angle.

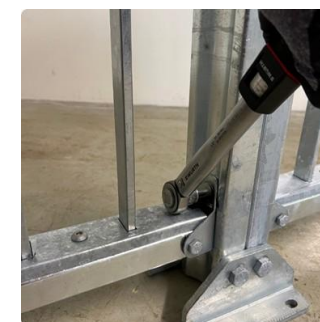
Loosen the connection screws (photos M and N) between the rotation profile and the pole, **ensuring the nuts remain on the screws**.

Rotate the entire module connected to the pole (this step is recommended for two people), taking care to **allow the rotation profiles to slide simultaneously within the slots**.

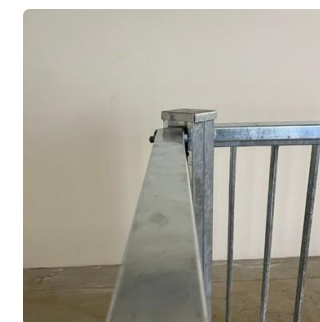
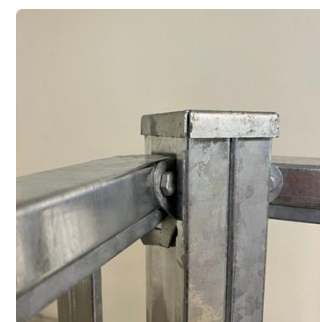
This step is essential to avoid mechanical jamming or misalignment when adjusting the module.



M



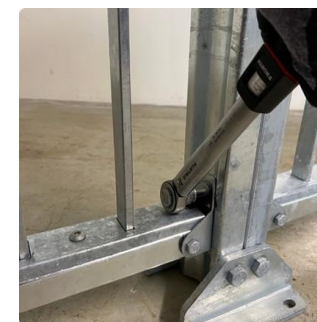
N



If necessary, correct the previously set angle and only then pre-tension the screws connecting the rotation profile to the pole.

4.3.11 Height Adjustment

Once the section has been installed, if necessary, align the handrails.



5. Inspection and Maintenance

It is recommended to carry out periodic inspections (approximately every 12 months) to verify the condition of the structure and tightening of the bolts.

If any bolts are found to be loose, they must be re-tightened according to the specifications given in section 4.2 – Tightening Torque Table. To prevent loosening, the use of **thread-locking** adhesive is recommended.



6. Restoration and Durability

In the event of damage to one or more modules or components of the guardrail, **immediate replacement** is required to ensure safety and proper system functionality.

The components of the **RAILY DRS URBAN PRO** guardrail, in the galvanized version, are protected by **hot-dip galvanizing** in accordance with **UNI EN ISO 1461**, ensuring long-term durability.

7. Normative References

NTC 2018	Technical Construction Standards
UNI CEN 1317-6	Pedestrian Guardrails
UNI EN 1993-1-3:2007	Design of Steel Structures
ISO 2768-fm	General Tolerances
UNI EN ISO 1461	Hot-Dip Galvanizing

8. Handling, Transport, and Safety

All components of the RAILY DRS URBAN PRO system must be handled, transported, and installed in accordance with applicable regulations, protected from damage, and kept ready for installation.

All operations must be carried out in compliance with D.Lgs. 81/2008 (Italian Occupational Health and Safety Law) and applicable European regulations, using appropriate PPE (Personal Protective Equipment) and correct handling procedures by qualified personnel.

9. Warranty

The RAILY DRS URBAN PRO system is covered by a 12-month warranty from the date of delivery against manufacturing and material defects. The warranty is valid only if installation is carried out in accordance with this manual and exclusively with original components.

The warranty becomes void in the event of damage resulting from non-compliant installation, improper use, the use of materials or anchoring systems not supplied by the manufacturer, accidental impacts, or tampering.