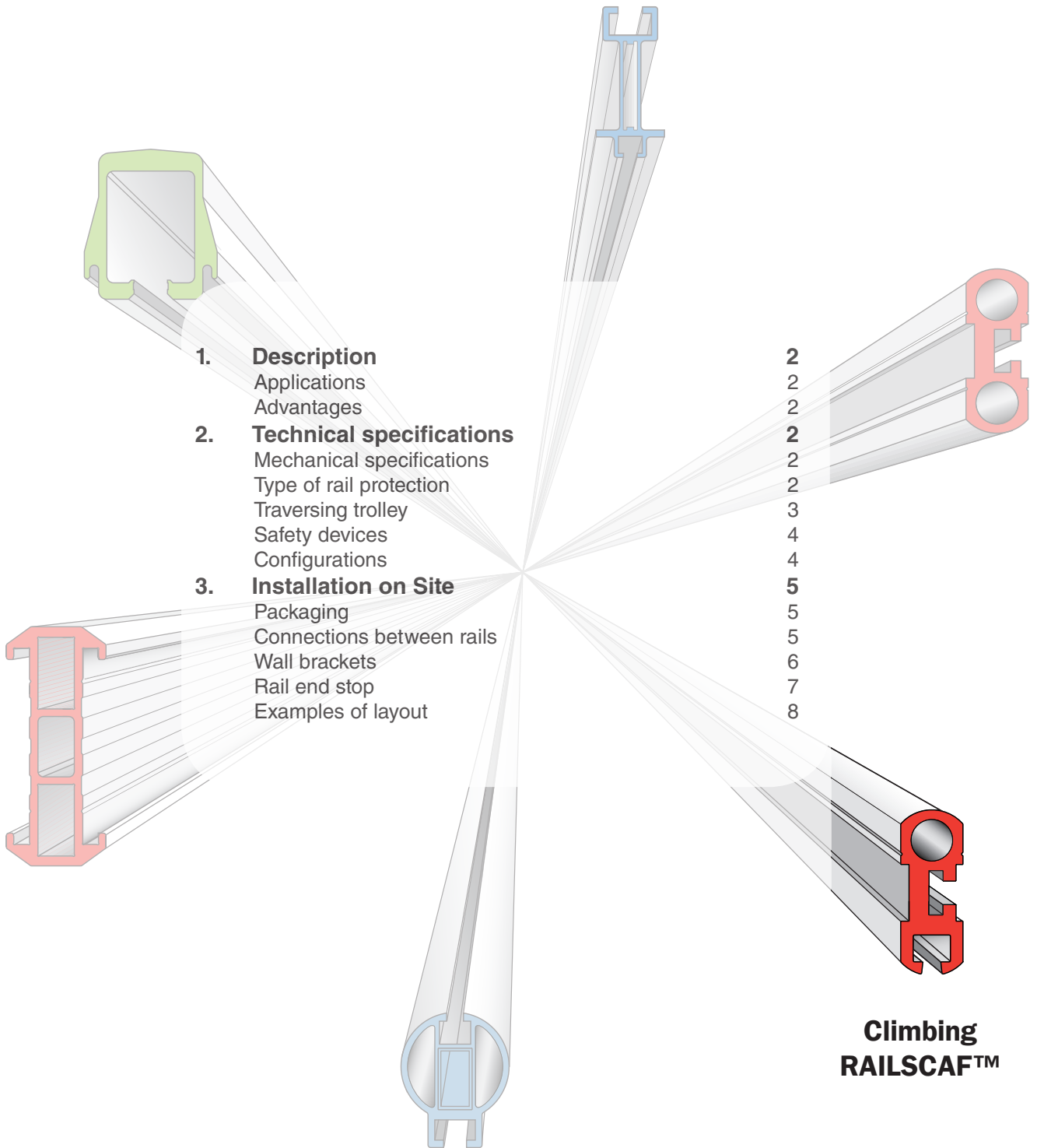


# Tractel Secalt™ Monorails



Climbing  
RAILSCAF™

## 1. DESCRIPTION

### Applications

The climbing RAILSCAF™ is a system for maintenance of facades. It consists of a monorail fixed to the perimeter of the building, one or two trolleys running on the monorail and a cradle suspended from the trolley(s).

The trolley is motorized and moves in a **horizontal plane** and **on slopes** (up to 60°). For operating on inclined section the monorail is provided with an integrated linked chain. The pinion of the trolley engages automatically with the chain when switching to a sloped section.

### Advantages

- Rigid and aesthetic profile.
- Installation costs minimized by long reach between brackets (3 m).
- Brackets for any type of facade.
- Trolleys are robust and reliable.
- Horizontal and vertical bending.
- Curves with small radius R = 700 mm.
- Slope angle up to 60°.
- Combination with all cradles manufactured by Tractel Secalt™ (ALTA or SOLO) or SOLSIT work seats.

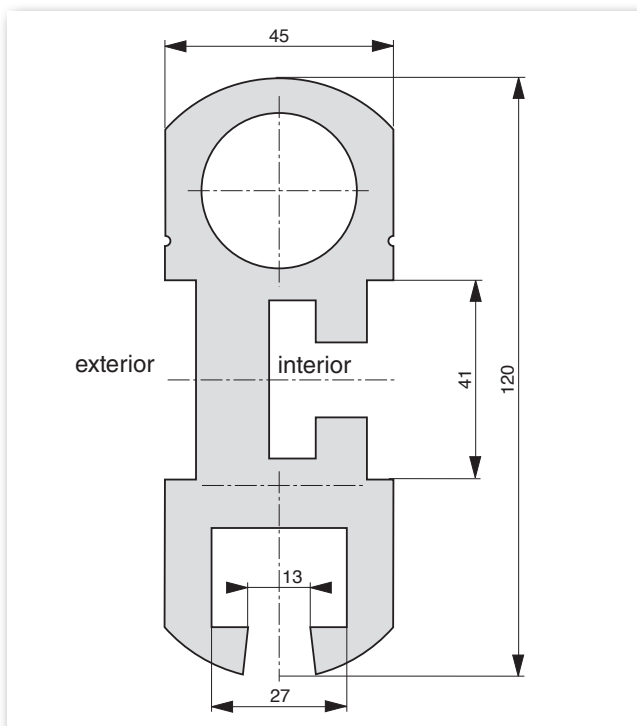


Fig. 1. - Climbing RAILSCAF™ profile, 120 x 45 mm

## 2. TECHNICAL SPECIFICATIONS

### Mechanical specifications

Max. load per trolley	350 kg
Aluminum profile	120 x 45 mm.
Standard length	5,800 mm
Weight	7.6 kg/m
Minimum horizontal bending radius (external / internal)	R = 700 mm
Minimum vertical bending radius	R = 1,560 mm
Max. span between 2 brackets	3,000 mm
Chain (inclined section only)	ASA 3/4"x1/2"

The deformation of the rail under a load of 350 kg is less than 1/250 of the span, or less than 12 mm.

### Type of rail protection

#### Protection by anodizing (optional)

Protection by anodizing protects against corrosion by creating a film of aluminum oxide, 20 microns thick.

The colors available are:

Natural aluminum

Gold

Dark beige Eurocolor 2006

Light Beige Eurocolor 2005

Chestnut Eurocolor 2007

Black Eurocolor 2008

#### Protection by powder coating (optional)

The colors available match the RAL range matt or gloss (sample on request).



RAILSCAF™ equipment complies with European Union directives and is manufactured under ISO 9001 conditions.

## Traversing trolley

The trolley is made up of a gear motor with main brake backed up by a fall prevention device (secondary over speed brake) and a set of rollers and sliding pads enclosed in a stainless steel casing, enabling perfect traversing and guiding on the monorail, as well in the curves and on slopes.

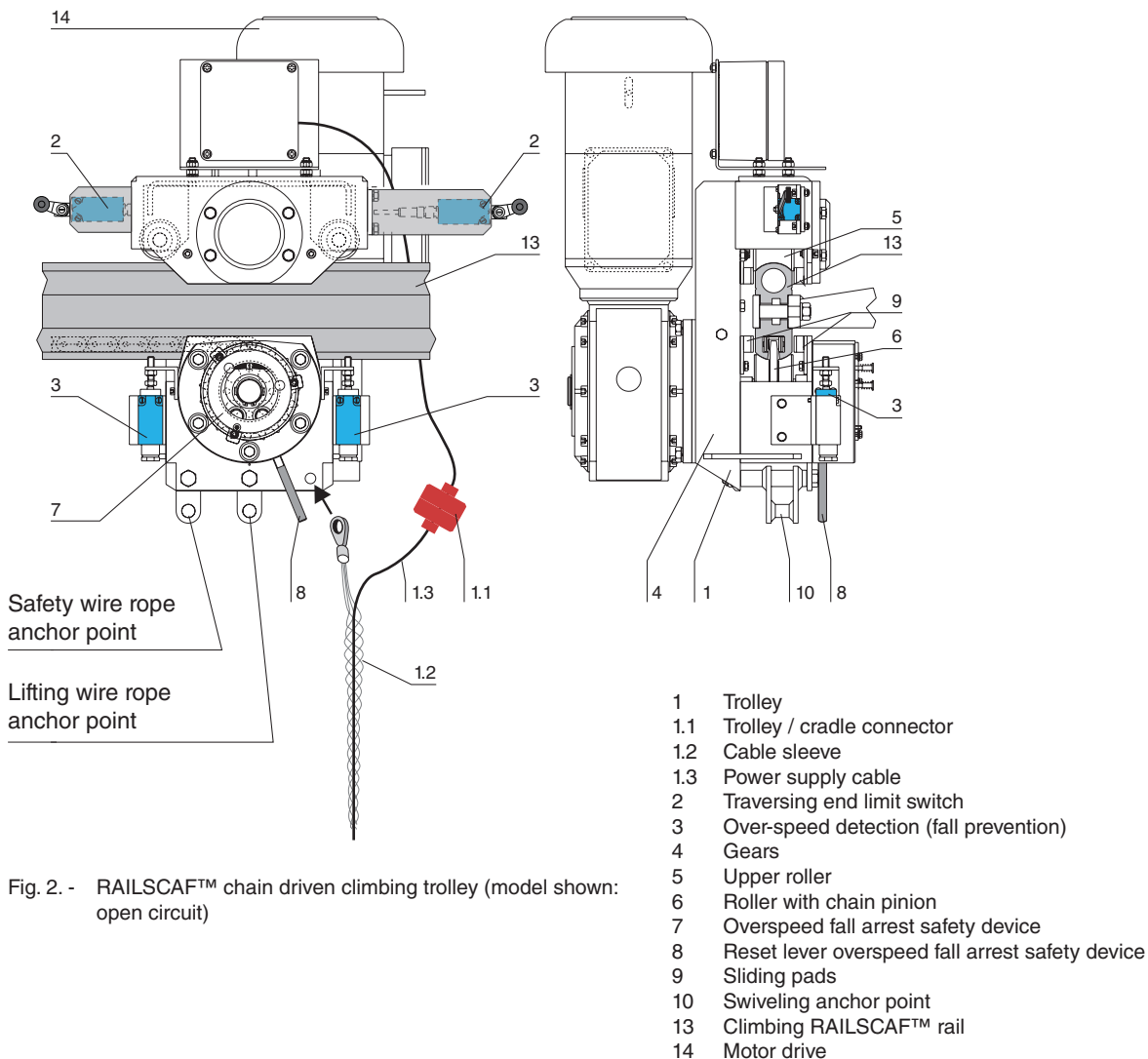
A toothed wheel passes the power onto the linked chain in the monorail when switching onto a gradient.

## Motor specifications

Type: geared motor  
completely closed brake

Weight	71 kg
Speed	±6 m/min
	three-phase power supply 230/400 V, 0.75 kW
Degree of protection	IP55
Insulation class	F
Code (open circuit)	25149
Code (closed circuit)	25159

## Main components



## Safety devices

### End of travel

Traversing is stopped at the end of the track when it approaches an end stop buffer (in case of open rail track).

### Over-speed detection (fall prevention)

- Triggered by over-speed
- Fully ALUMINIUM + STAINLESS STEEL
- Transparent window for checking good mobility of the flyweight spring control.

### Electromagnetic brake

In the event of a power failure during traversing, the electromagnetic brake integrated in the motor drive (14) automatically closes. It also closes each time the LEFT or RIGHT pushbuttons are released.

## Configurations

The RAILSCAF™ climbing trolley can be used with cradles with one or two suspension points (always with two cables per suspension point). A cradle with two suspension points requires two RAILSCAF™ climbing trolleys synchronized by a connecting rod.

The power supply and control of the trolley(s) are performed from the control unit of the cradle suspended from the trolley(s).

### 1. Climbing RAILSCAF™ using SOLO cradle

#### Main components

- 2 Traversing limit switch
- 10 Pivoting anchor point
- 11 Connecting rod (optional)
- 11.1 Speed synchronization by two limit switches
- 23 Lifting wire rope
- 24 Safety wire rope

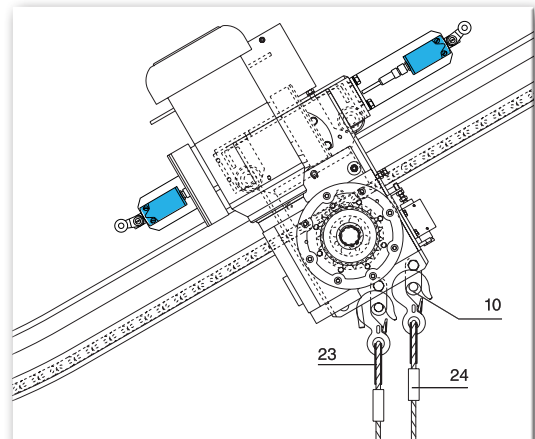


Fig. 3. - Climbing RAILSCAF™ with SOLO cradle or SOLSIT work seat.

### 2. Climbing RAILSCAF™ using ALTA cradle

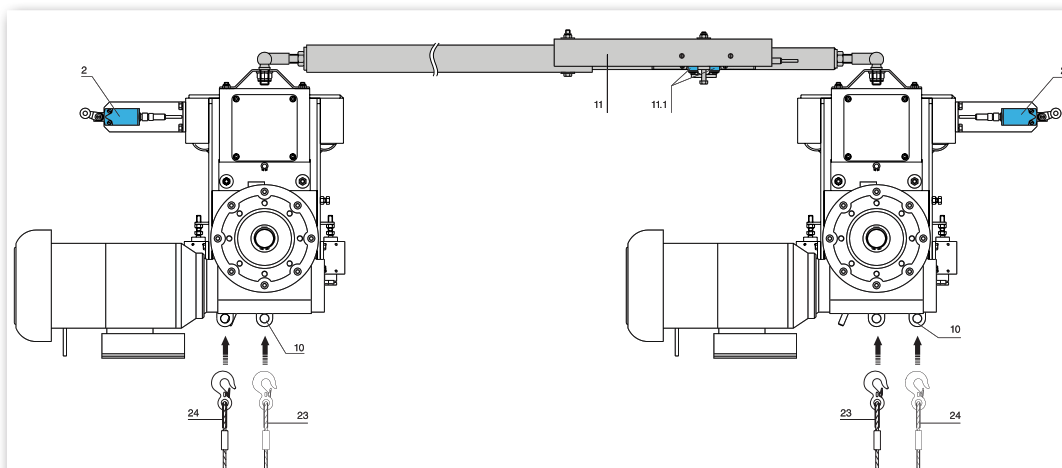


Fig. 4. - Climbing RAILSCAF™ with ALTA cradle

### 3. INSTALLATION ON SITE\*

#### Packaging

The rails are delivered on site in bars of 5.80 m long and weighing ± 44 kg. Curves are pre-bent in the factory. On the bent parts, chains are inserted at the factory.

#### Connections between rails

All connections must be carried out at a maximum distance of 500 mm from the wall bracket.

#### Fixed connection

The standard connection between two rails is achieved with two splice bars and a Ø 30x245 aluminum rod, fixed by 4 Ø 3.7x19 nails

#### Expansion connection

An expansion connector is placed after two fixed connections (= every 17.40 m). The connection between two rails is achieved by a Ø 30x245 aluminum rod and a splice bar. The assembly is fixed to the wall bracket (9). This type of connection must always be made in line with a wall bracket.

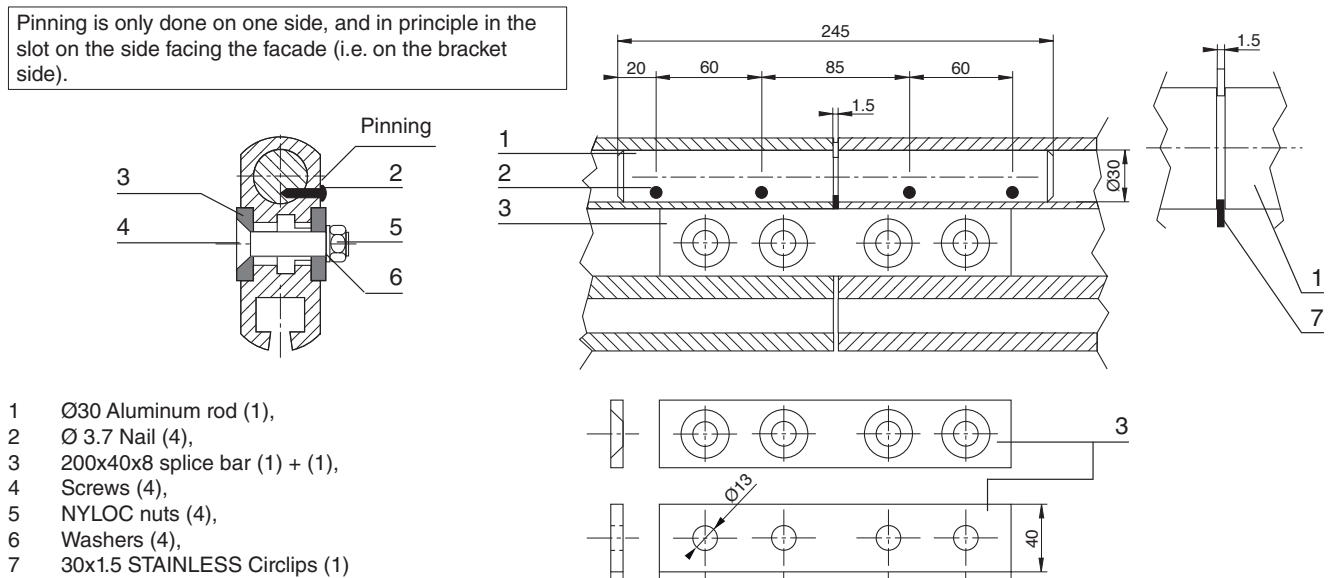


Fig. 5. - Fixed connection

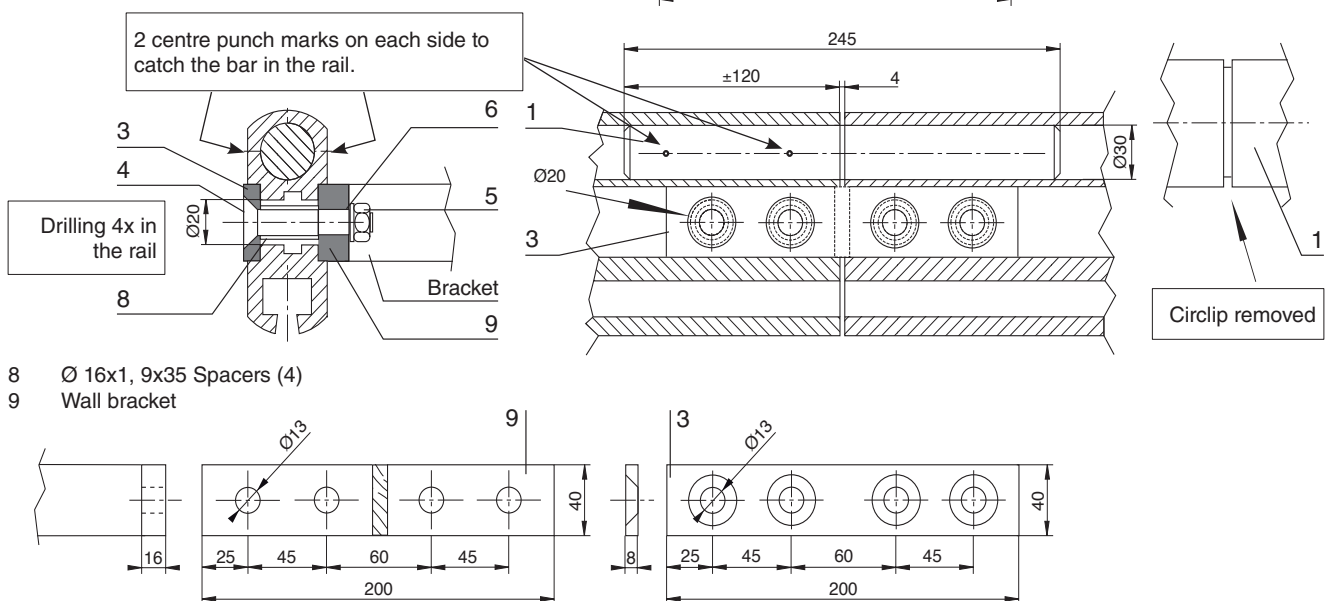


Fig. 6. - Expansion connection

\* Comment: the instructions in this document are to be followed if there is no differing information on the lay-out drawing.

### Wall brackets\*

The monorail is secured on galvanized or stainless steel brackets, which are positioned every 3 m on the straight sections. Their location in the curves and corners of facade must be studied in relation with the configuration of the building.

The bracket fixing plate allows a ±7 mm vertical adjustment.

The rails are fixed to the brackets with hammerhead M12 hot galvanized 8.8 steel bolts.

### Maximum Performance

	Nom. load. (daN)	Max. span $L_{Max.}$ (Mm)	Reactions (per anchor) in daN			
			Nominal		Ultimate	
			Rh	Rv	Rh	Rv
SOLO	350	950	**	**	**	**
ALTA	700	700	**	**	**	**

\* Special bracket for all types of facade on request

\*\* The Rh and Rv reactions depend on the slope of the rail.

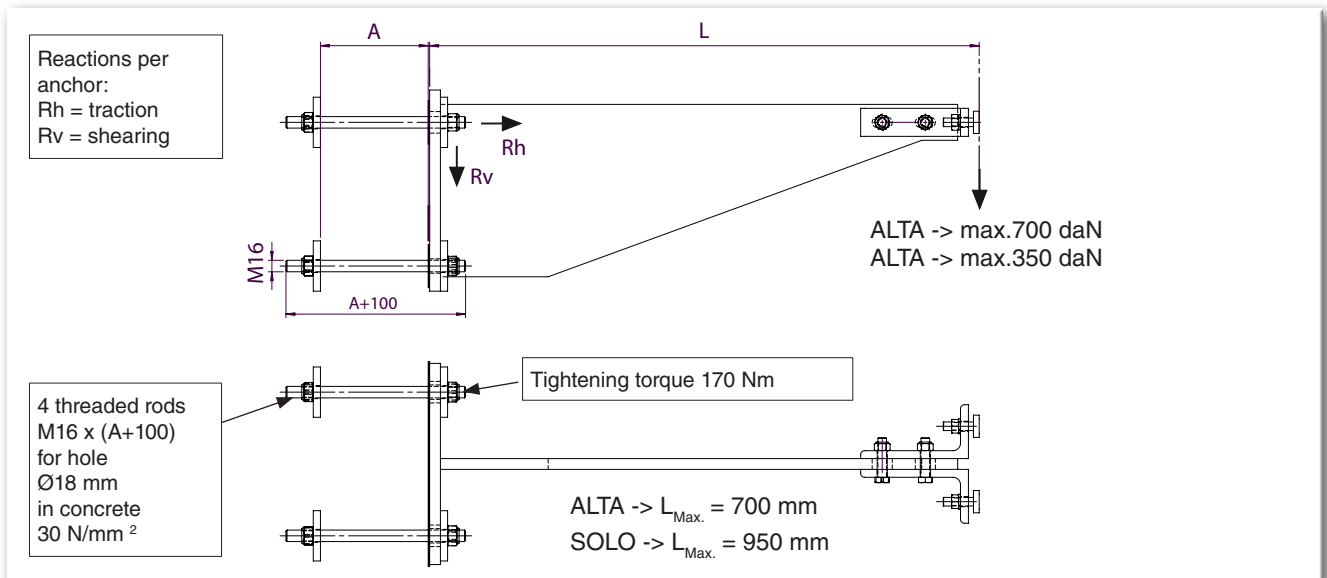


Fig. 7. - RAILSCAF™ bracket with four threaded rods

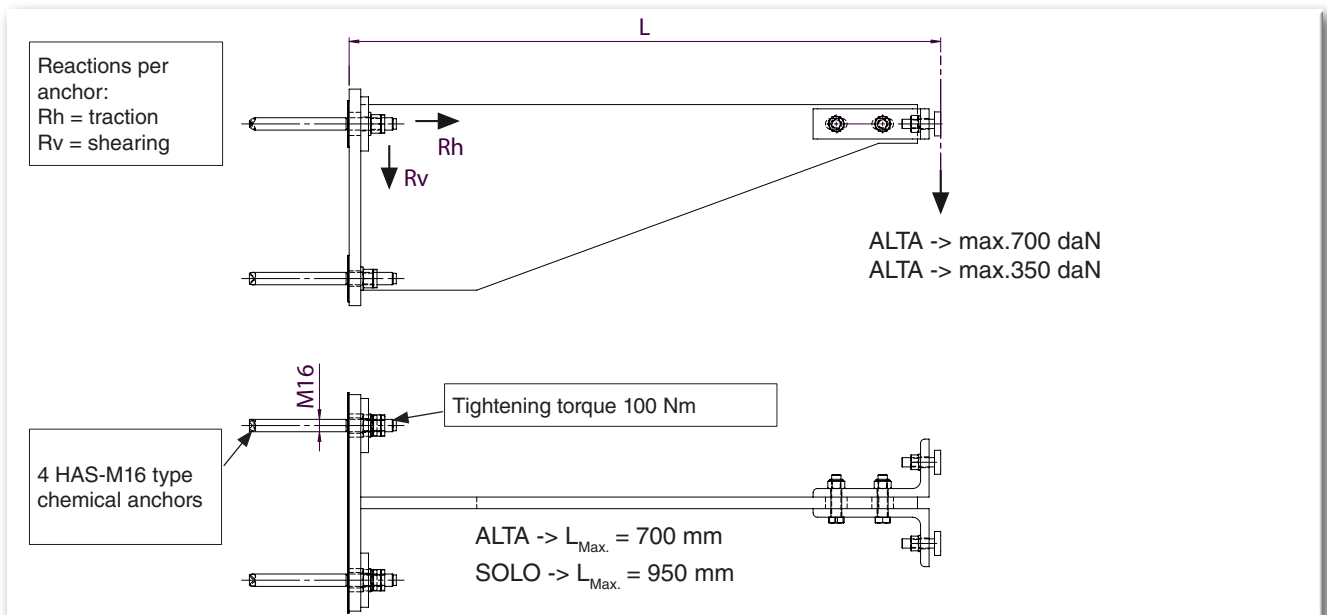


Fig. 8. - Bracket for inclined RAILSCAF™ with four chemical anchors\*\*\* (concrete 30 N/mm²).

\*\*\* To install the anchors, please comply with the manufacturer's installation instructions.

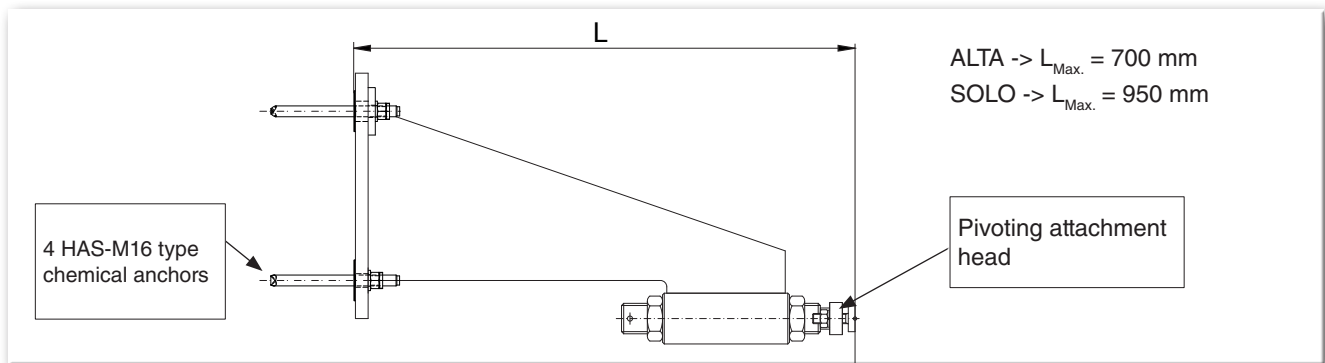


Fig. 9. - Bracket for inclined RAILSCAF™ with four chemical anchors\* (concrete 30 N / mm<sup>2</sup>)

\* For installation and tightening torque on the chemical anchor, please comply with manufacturer's instructions.

### Drilling template

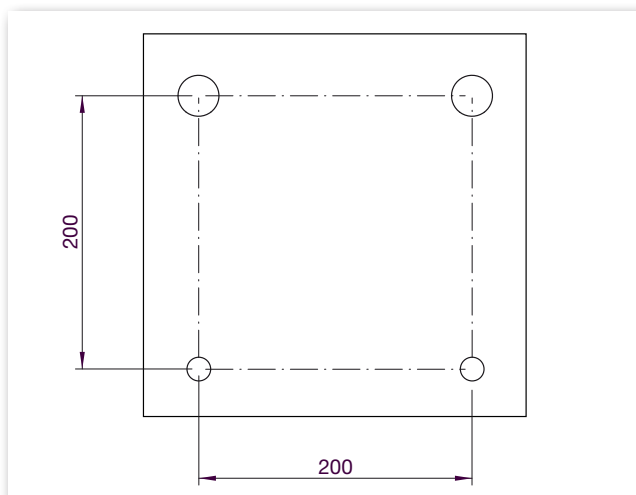


Fig. 10. - RAILSCAF™ bracket - drilling template

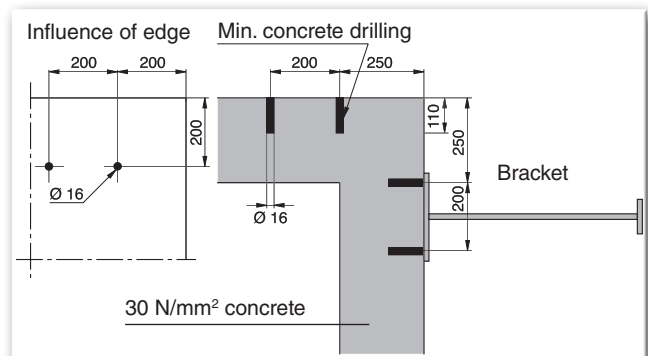


Fig. 11. - Securing to outer corners of the building

### Rail end stop

On «open» trackways an end stop must be fitted to both ends of the monorail. These removable stops are bolted onto the rail.

Traversing limit switches (12) mounted on the trolley, automatically stop it when it approaches an end stop buffer.

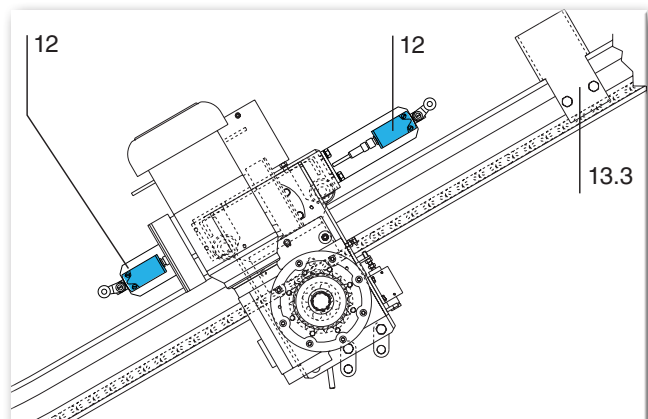


Fig. 12. - Inclined monorail with trolley, end stops (13.3) and traversing limit switches (12).



Examples of layout

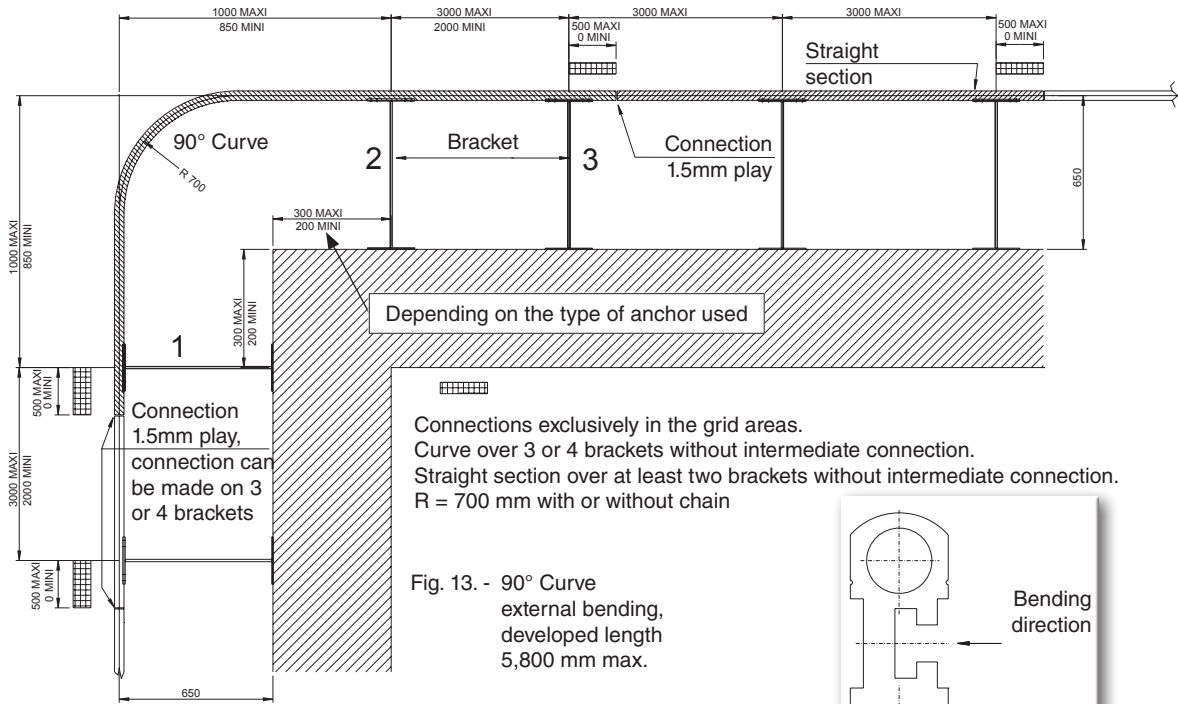


Fig. 13. - 90° Curve  
 external bending,  
 developed length  
 5,800 mm max.

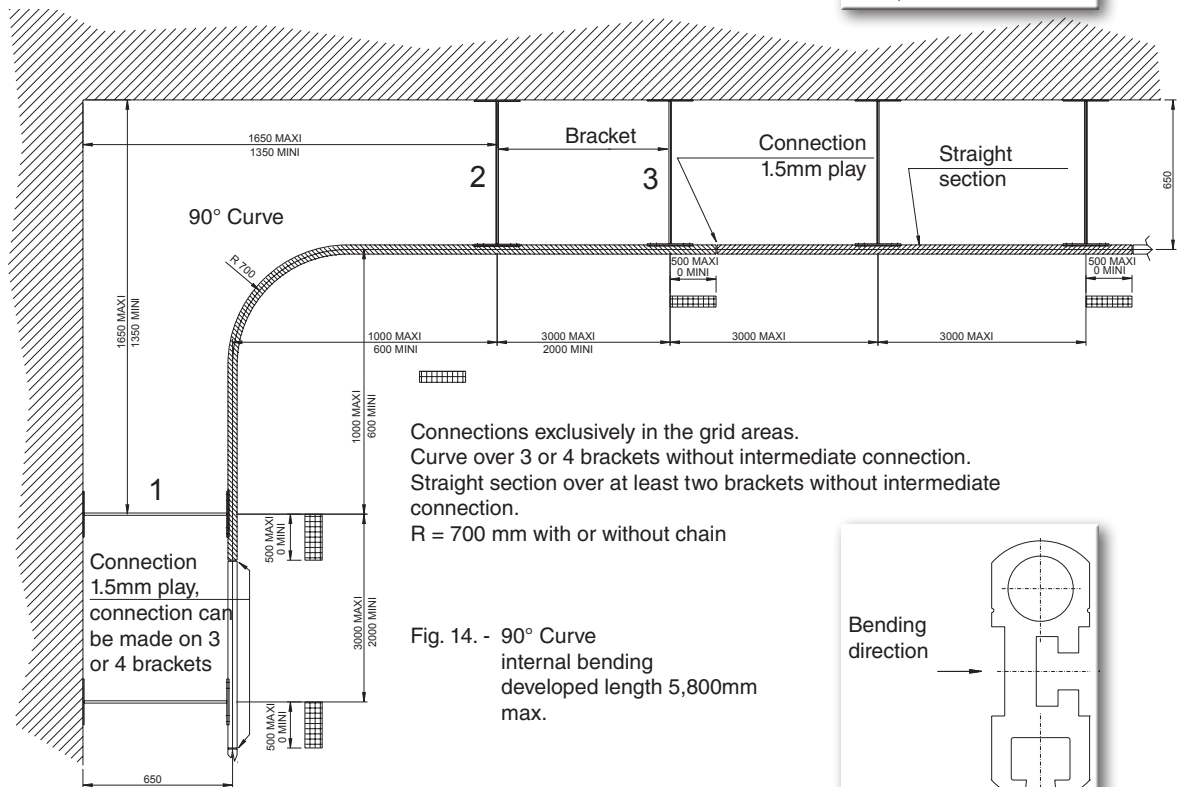
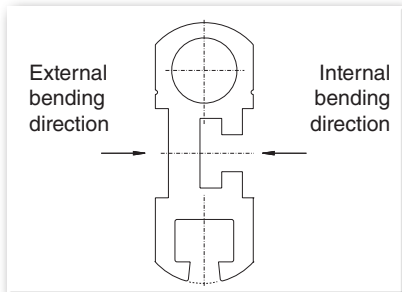
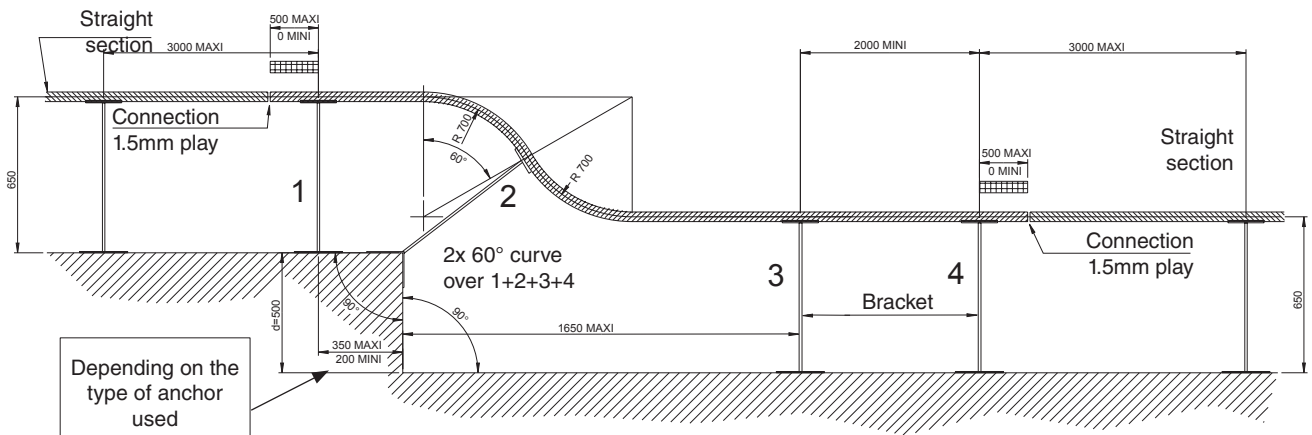


Fig. 14. - 90° Curve  
 internal bending  
 developed length  
 5,800mm  
 max.

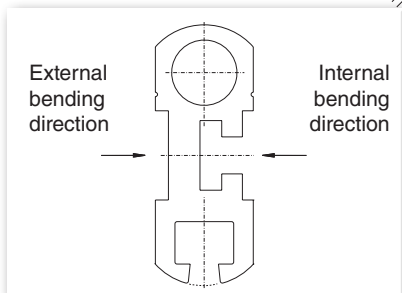
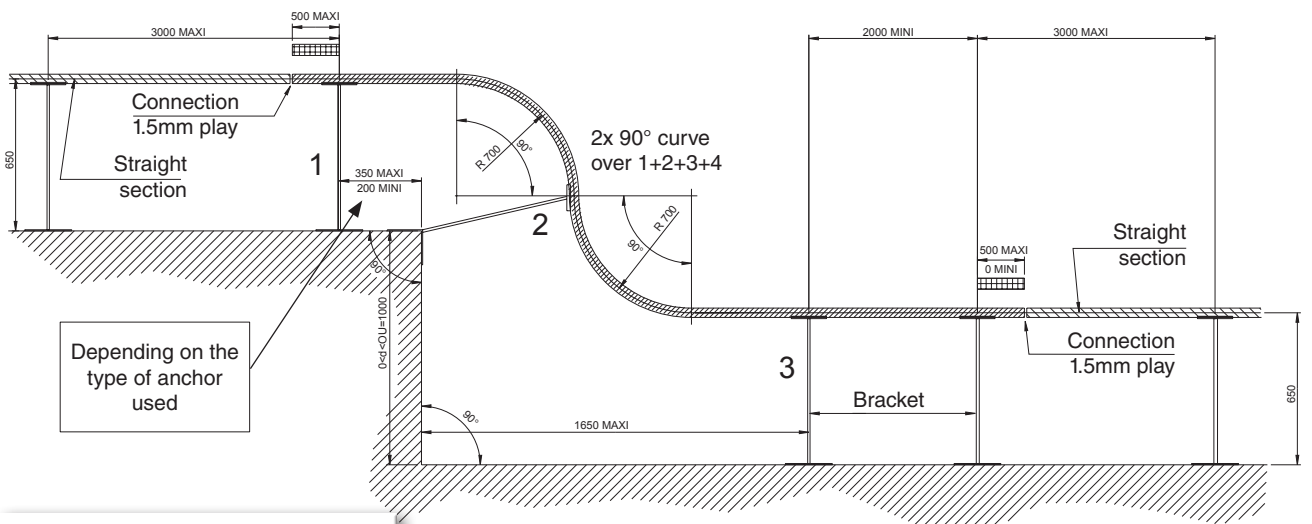






Connections exclusively in the grid areas.  
 Curve over 3 or 4 brackets without intermediate connection.  
 Straight section over at least two brackets without intermediate connection.  
 Chain pitch in curves.

Fig. 17 - 2 x 60° for horizontal profile.  
 External and internal bending  
 Developed length curved or straight section: 5,800 mm max.



Connections exclusively in the grid areas.  
 Curve over 3 or 4 brackets without intermediate connection.  
 Straight section over at least two brackets without intermediate connection.  
 No chain in curves.

Fig. 18 - 2 x 90° for horizontal profile.  
 External and internal bending  
 Developed length curved or straight section: 5,800 mm max.

Fig. 19. - 45° slope.

Developed length:  
min. 3050 mm / 5,800 mm max.  
Minimum bending radius:  
R = 1,500 mm

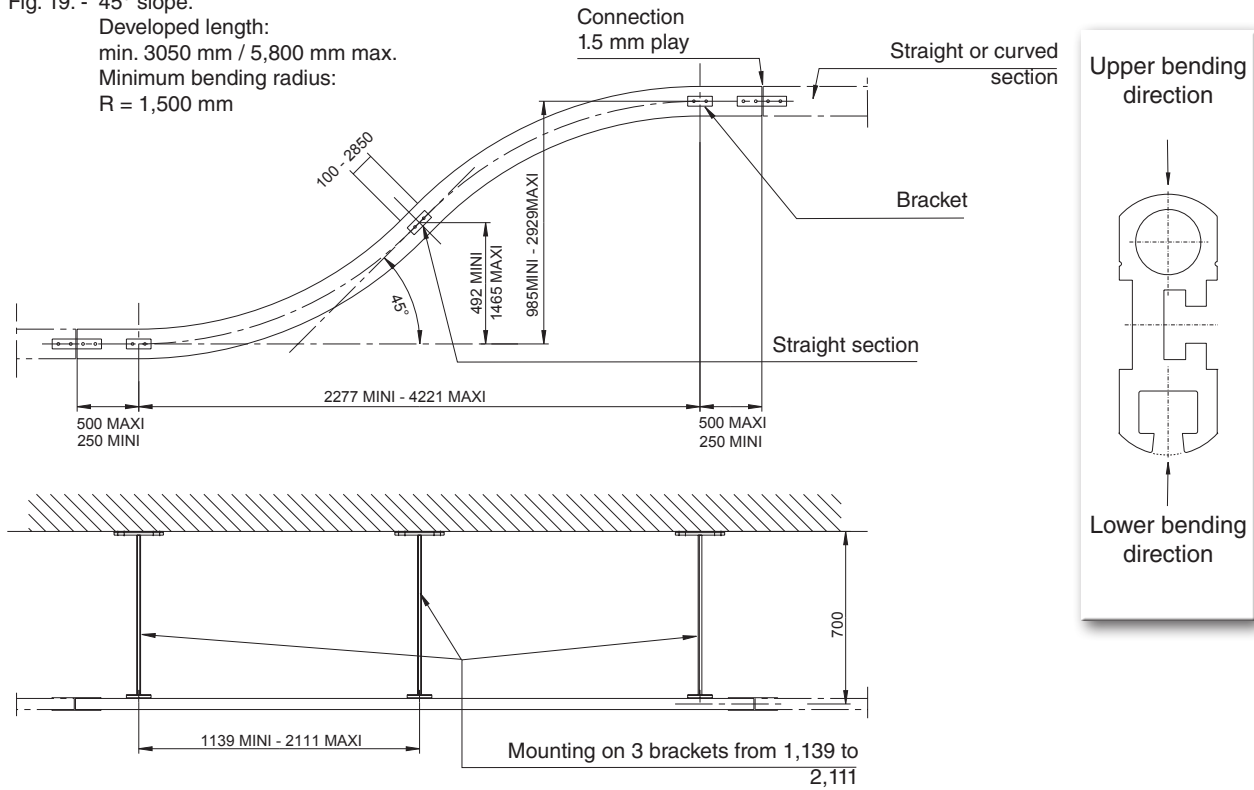
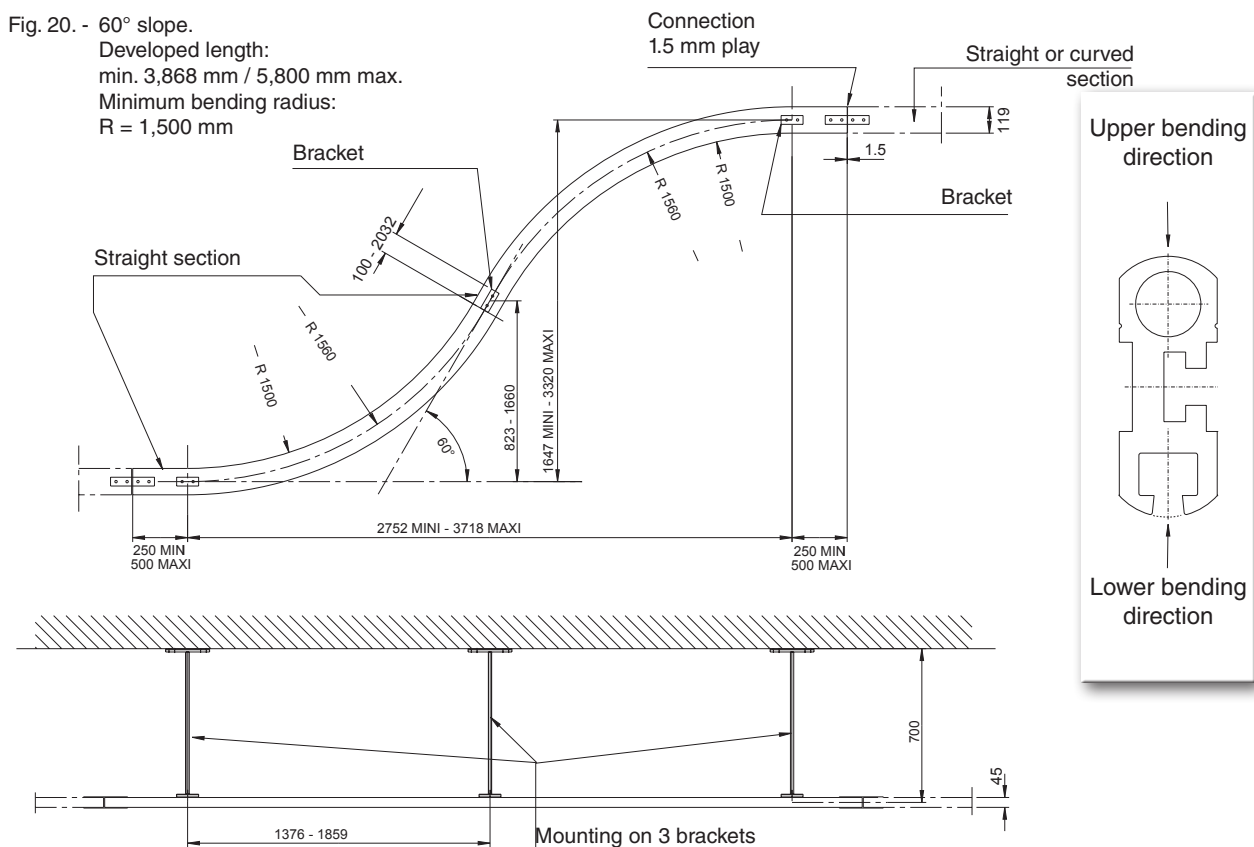


Fig. 20. - 60° slope.

Developed length:  
min. 3,868 mm / 5,800 mm max.  
Minimum bending radius:  
R = 1,500 mm



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**Climbing RAILSCAF™**  
**horizontal and inclined (<60°) monorail system**

**sheet**  
**Technical**

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