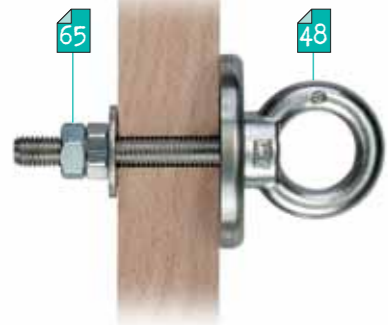
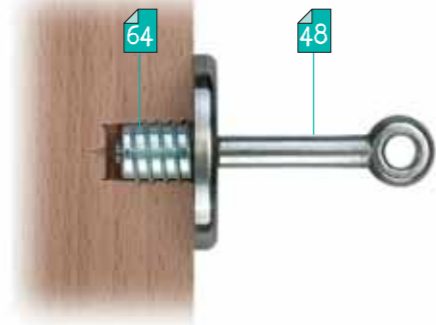


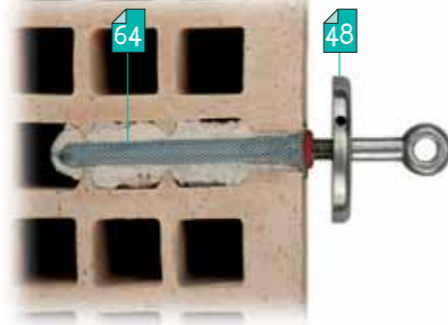
WALL-MOUNTING SPACERS ON VARIOUS BUILDING MATERIALS



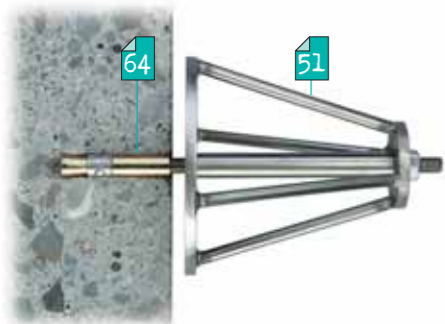
**Through hole in wood**  
Headless screw with nut and check nut at back, front ring nut with support washer to absorb lateral forces at front.



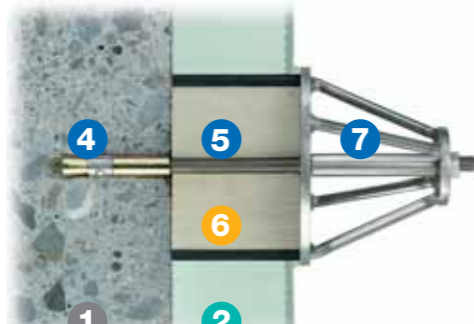
**Screw-in nut for wood**  
The metric internal thread of the screw-in nut accepts a rope holder or a headless screw.



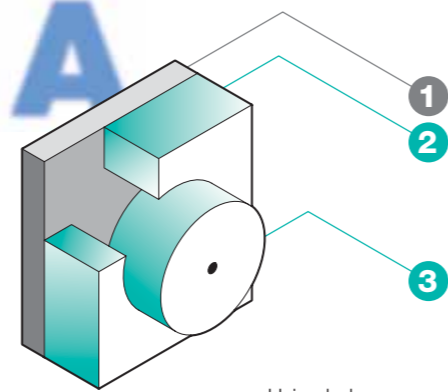
**Perforated hollow wall anchor**  
The perforated anchor is secured with a two-component mortar. The metric internal thread accepts a rope holder.



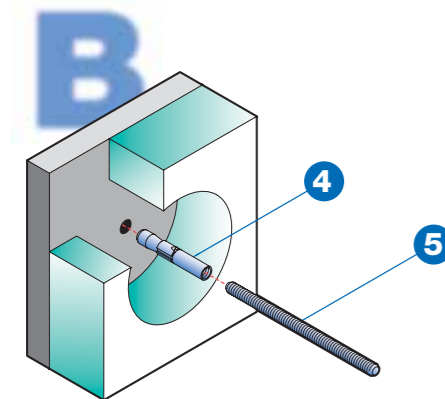
**Bolt anchor with internal thread**  
Suitable for concrete façades and hard stone. The bolt anchor expands and grips when the threaded rod is screwed in.



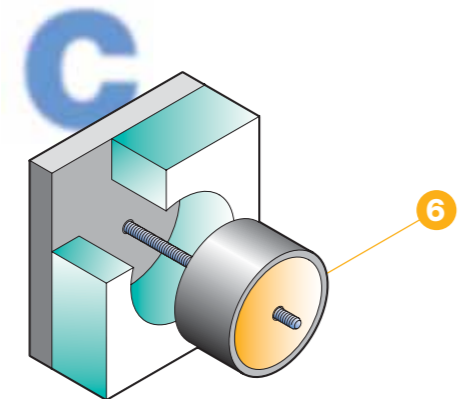
**Externally insulated façades**  
The spacer is mounted on an insulated support tube and thus transfers lateral forces to the substrate (see Figs. A to F).



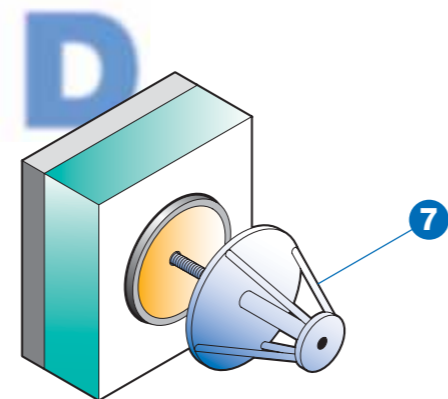
Using hole saw, core out external insulation (2) on façade (1) and remove insulation piece (3).



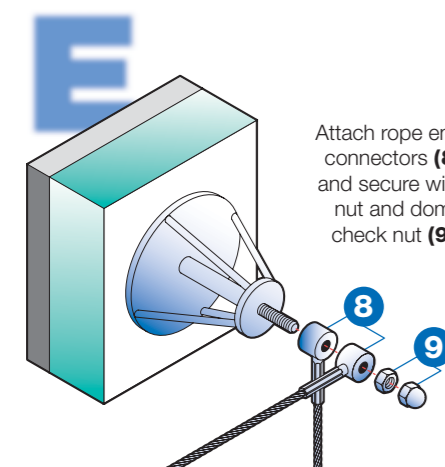
Screw threaded rod (5) into bolt anchor with internal thread (4) and tighten.



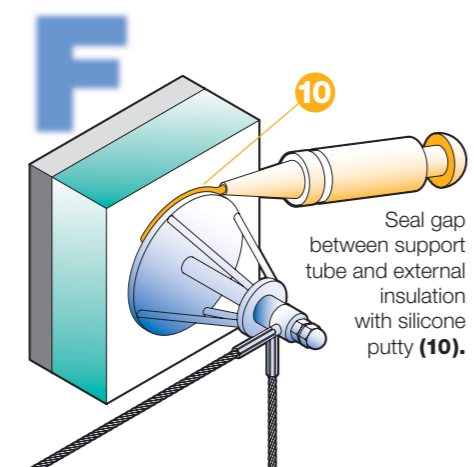
Slide foamed support tube (6) over threaded rod. Support tube length approx. 5 to 8 mm larger than insulation thickness.



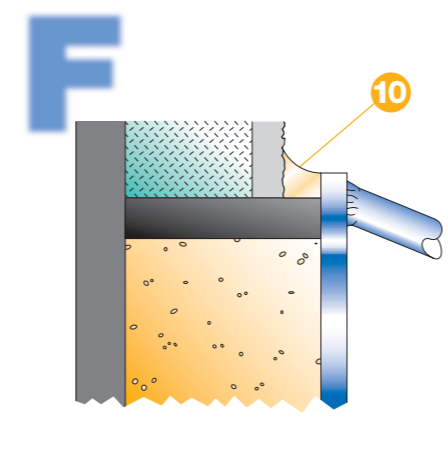
Slide spacer basket (7) on threaded rod and align.



Attach rope end connectors (8) and secure with nut and dome check nut (9).



Seal gap between support tube and external insulation with silicone putty (10).



TRAINING SYSTEMS IN THE JAKOB LINE

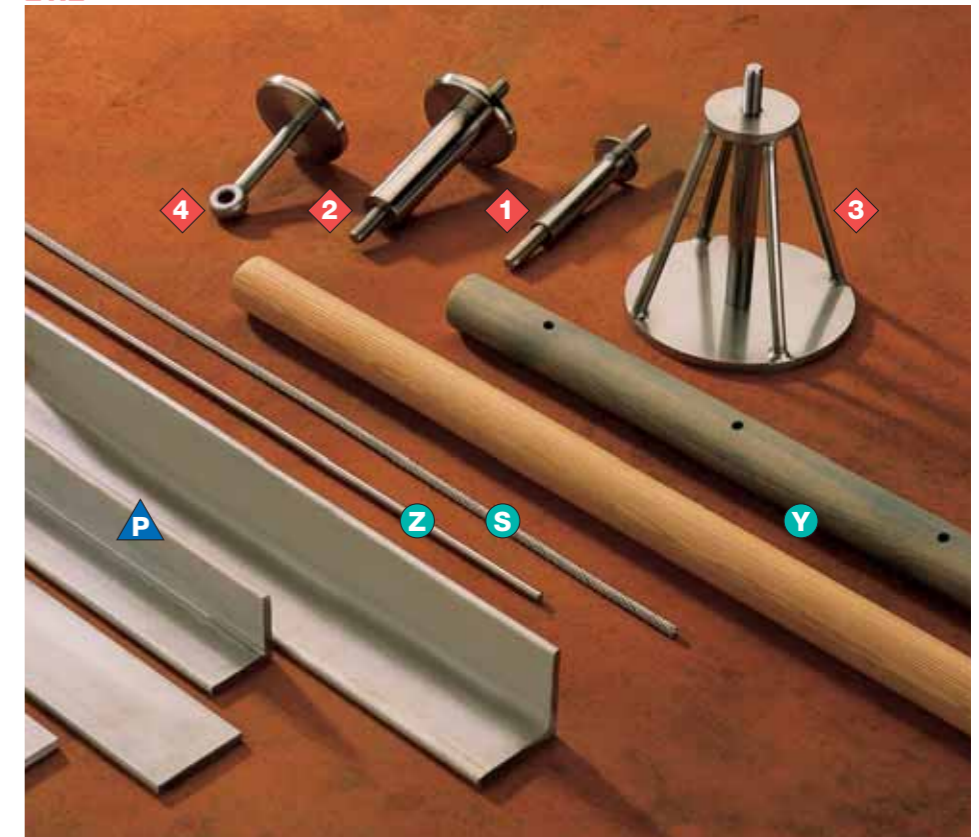
**Choosing suitable materials**  
The different atmospheric conditions (rural, urban, industrial) determine the selection of materials. Urban and industrial atmospheres may contain aggressive carbon-containing particles and sulphur dioxide (SO<sub>2</sub>). At sea level, the air contains aerosols with chloride ions. Rural air is usually unproblematic.

**All parts of the Jakob® INOX LINE are made of AISI 316, 1.4401, and AISI 316L, 1.4404,** alloys to offer excellent corrosion resistance.

**AISI 316**  
1.4401, EN 10088-3 X5CrNiMo17-12-2

**AISI 316L**  
1.4404, EN 10088-3 X2CrNiMo17-12-2

The life span of plants for façade greening can range from 30 to 100 years! To assure that the training systems outlive the plants, the selection of materials is very crucial.



ROPES / RODS / SECTIONS

The wire ropes have a rated diameter of 4 mm (actual: Ø 3.7 mm). **A yellow code filament (S) confirms the authenticity of the rope** made from AISI 316 and guarantees a minimum breaking load of 9.1 kN. The 3.7 mm diameter ground rods (Z) are also made from AISI 316; they have a minimum breaking load of 5.5 kN.

**Our wooden rods (Y)** have a diameter of 25 mm. They are made either of glazed spruce (grey) or untreated larch. All wooden rods are available with cross bores (Ø 0.5 mm) along their entire length.

- Wall mounts**
- Spacer Ø12/24 (1)
  - GreenGuide spacer Ø 20/50 (2)
  - Spacer basket Ø 40/100 (3)
  - Eye bolt with support washer (4)

- Brackets (P) for spacers**
- Angle section 30 / 30 / 4 mm
  - Angle section 40 / 40 / 4 mm
  - Flat section 30 / 4 mm
  - Flat section 40 / 4 mm

Dimensions (mm)	J (cm <sup>4</sup> )	W (cm <sup>3</sup> )	kg/m
40 / 40 / 4	4.48	1.56	2.42
30 / 30 / 4	1.81	0.86	1.78
40 / 4	2.13	1.06	1.26
30 / 4	0.90	0.60	0.94

J = moment of inertia / W = moment of resistance

PLANNING AIDS FOR THE ENGINEER

The following parameters are important for planning a training system:

- Selected plant and its weight per m<sup>2</sup>
- Deciduous or evergreen?
- Which configuration of ropes/rods is needed (horizontal/vertical/combined/inclined, etc.)?
- Orientation: South/North/East/West? Special site conditions such as wind, etc.
- Rope/rod grid aperture and wall clearance
- Length and width of greened area (sketch with dimensions)
- Jakob® INOX LINE catalogue

SPACER LOAD DIAGRAM

