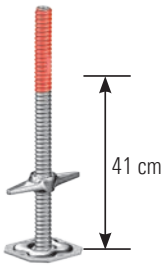
Layher Info
Information about products and technology for clients and partners.

Layher®
More Possibilities. The Scaffolding System.

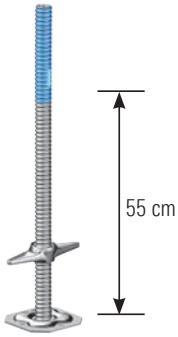
March 2016

RELIABLE LOAD TRANSMISSION

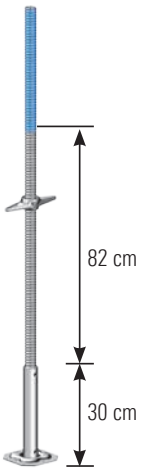
WHAT HAS TO BE NOTED WITH BASE PLATES?



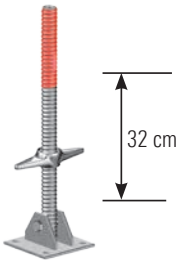
Base plate 60
(max. spindle travel 41 cm)



Base plate 80, reinforced
(max. spindle travel 55 cm)



Base plate 150, reinforced; (max. spindle travel 82 cm), ensure sufficient structural strength



Swivelling base plate 60, reinforced; (max. spindle travel 32 cm), ensure sufficient structural strength

In addition to the classic lightweight scaffolding spindle, Layher has many other spindles in its range.

Scaffolding must be able to sustain and distribute loads safely. This includes live loads, wind loads, the weight of the scaffolding or loads due to inclination. Spindles play an important role in this connection. In addition to the classic lightweight scaffolding spindle, Layher has other spindles in its range for very varied requirements. Depending on the spindle length and the intended use, Layher uses three different spindle types for both its base plates and its head jacks: "standard", "reinforced" and "solid".

The "standard" spindle type is for example incorporated into the classic size 60 base plate, while the "reinforced" type is used in the longer size 80 base plate. For transmitting high forces – such as when used for shoring or for stands – it is however the "solid" spindle which is used, for example the "solid size 60 base plate". In the event of divergence from the standard type, the spindle type used is indicated in the product description. In addition, base plates of the "solid" type can also be clearly identified in the installed state by the non-profiled foot plate punched out hexagonally. Regardless of the spindle type, all Layher head jacks and base plates are provided with the typical Layher round thread with self-cleaning property. Thread shape and outer diameter are the same in all Layher spindle types.

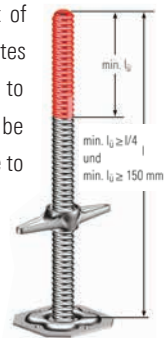
Load capacities of spindle cross-section as per DIN EN 12811-1, Annex B

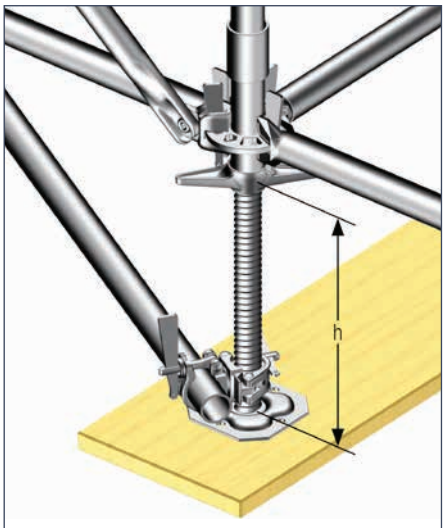
Spindle type	$N_{pl,d}$ [kN]	$S_{pl,d}$ [kNcm]	$R_{pl,d}$ [kN]
normal	97.7	83.0	36.0
reinforced	119.9	94.5	44.1
solid	288.0	157.0	106.0

Base plates of the "solid" type can be clearly identified by the non-profiled foot plate punched out hexagonally.

THE RIGHT USE

Base plates have a height-adjustable spindle nut. A notch on the thread prevents the spindle being extended too far and ensures a standards-compliant minimum length inside the upright tube. Also, in the assembled state the end of the spindle extension range is indicated by a red or blue mark. However, the structural strength verification always takes precedence over the maximum spindle extension length as designed, and specifies the maximum spindle extension for each individual scaffolding structure. For reliable transmission of standard loads, a spindle must, in accordance with DIN EN 12811-1, have at least 25 percent of its total length remaining inside the standard, with the so-called overlap length $l_ü$ being however at least 15 centimetres. Depending on the spindle type used and the height of the spindle extension, the base plates may need to be stiffened in order to increase load capacity. This can be the case when loads are larger due to lattice beams or when longer base plates are used.

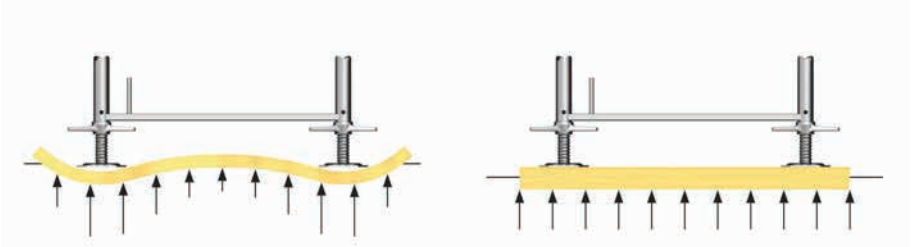




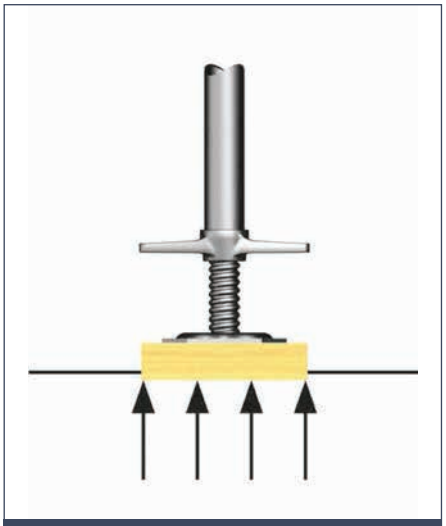
Spindle stiffening with scaffolding tube and wedged swivel coupler.

LOAD-DISTRIBUTING BASES

For mounting the base plates, the use of load-distributing bases is recommended in all cases. They not only widen the ground contact area, but also increase the frictional resistance, which is important for verification of its non-slip characteristics. Stones, of whatever shape or quality, are not permissible due to the risk of fracturing. As a general principle: the thicker the base, the better the load distribution. Layher recommends a minimum thickness of 4.5 centimetres – the thickness of a classic scaffolding plank.



Ground pressure under load-distributing bases: while the thin/soft base in the left-hand picture creates an uneven load distribution, a thick/stiff base – as in the picture on the right – largely provides an even load distribution.



Foot plates always must be placed on the centre of load-distributing bases.

TIP FOR SLOPING CONTACT AREAS

- For erecting scaffolding on sloping surfaces, the equalising plate is available as an ingenious solution. By turning the upper and lower parts relative to one another, the plates can be adjusted steplessly to inclines, and base plates with rigid foot plates can be placed vertically on a surface with an incline of up to 16 percent without any problems. The foot plates are in full-surface contact, i.e. without gaps. This makes the equalising plate a time-saving alternative to wooden wedges specially sawn to size, with the structurally favourable clamping effect of adjustable base plates also being retained.

With the Layher equalising plate for base plates, inclines can be adapted to steplessly.

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