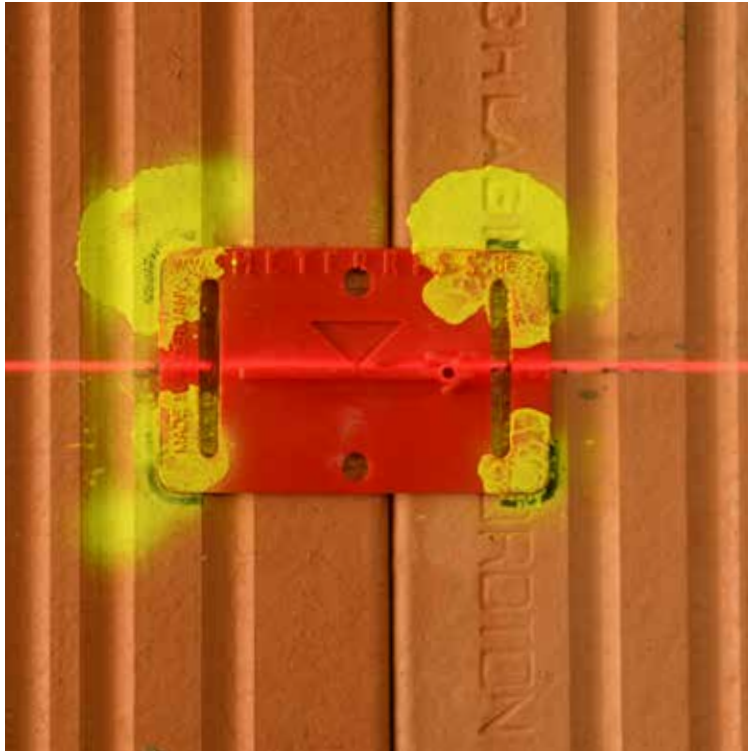


The RS Surveying Accessory System

The ideal addition to all surveying instruments



**NEW SCANNER-TARGET IN RANGE
FROM MARCH 2022**



← Laser scanner target

← RSFP-X94

← Adapter RSA-5/8-1

← Mini prism RSMP280 or RSMP380

← Adapter RSA-5/8-1

← Tribrach or tripod with 5/8" unc stud



Since 1997, the Rothbucher Systems Company has developed and sold products for the documentation of surveying points on construction sites and for the observation of buildings and objects of all types.

Our products are especially successful for monitoring and in the area of construction survey. Because of their high precision, they simplify work with modern surveying instruments. They also contribute to safety so that it is no longer necessary for surveyors to work on difficult or dangerous terrain for example.

High-precision instruments are indispensable to meet the high demands in surveying today. Therefore, pencil strokes, nails and other unidentifiable markers should be a thing of the past because they do not comply with the needs of modern surveying.

Precision starts with the surveying points. Only then can precision surveying instruments yield the expected results. This is also why our products are so much appreciated by surveyors, site managers, foremen and architects and now set a worldwide standard at many building sites.


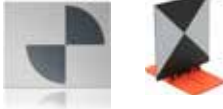





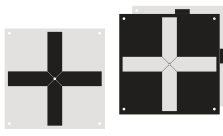
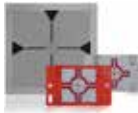
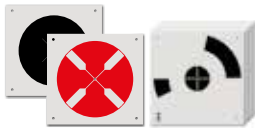











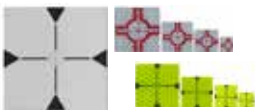



On our website www.smart-targets.com we show lots of examples about the use of our products. This is also where you can always find our latest products and their field of application. On the following pages, you will surely also find the right product for your current project or suitable products to supplement your surveying instrument.

If you have any questions, please do not hesitate to contact us.

Georg Rothbucher

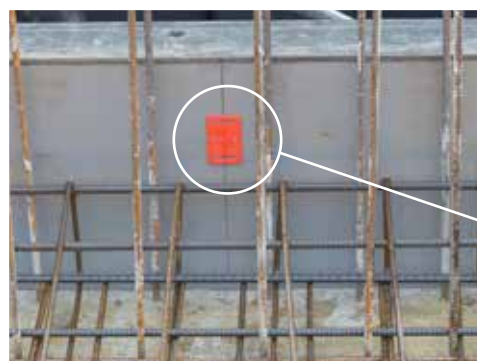
Founder and owner of Rothbucher Systems

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Ideal for concrete construction sites without plastering work and for permanent securing of axis as a negative imprint in concrete.



Datum and Axis Markers RS10 and RS11*

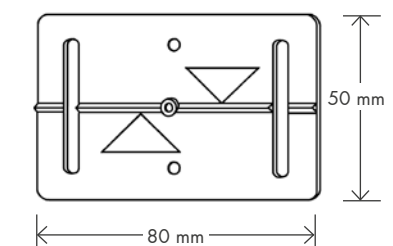


RS10 and RS11* are used to secure survey points on construction sites without plastering work and in door or window reveals.

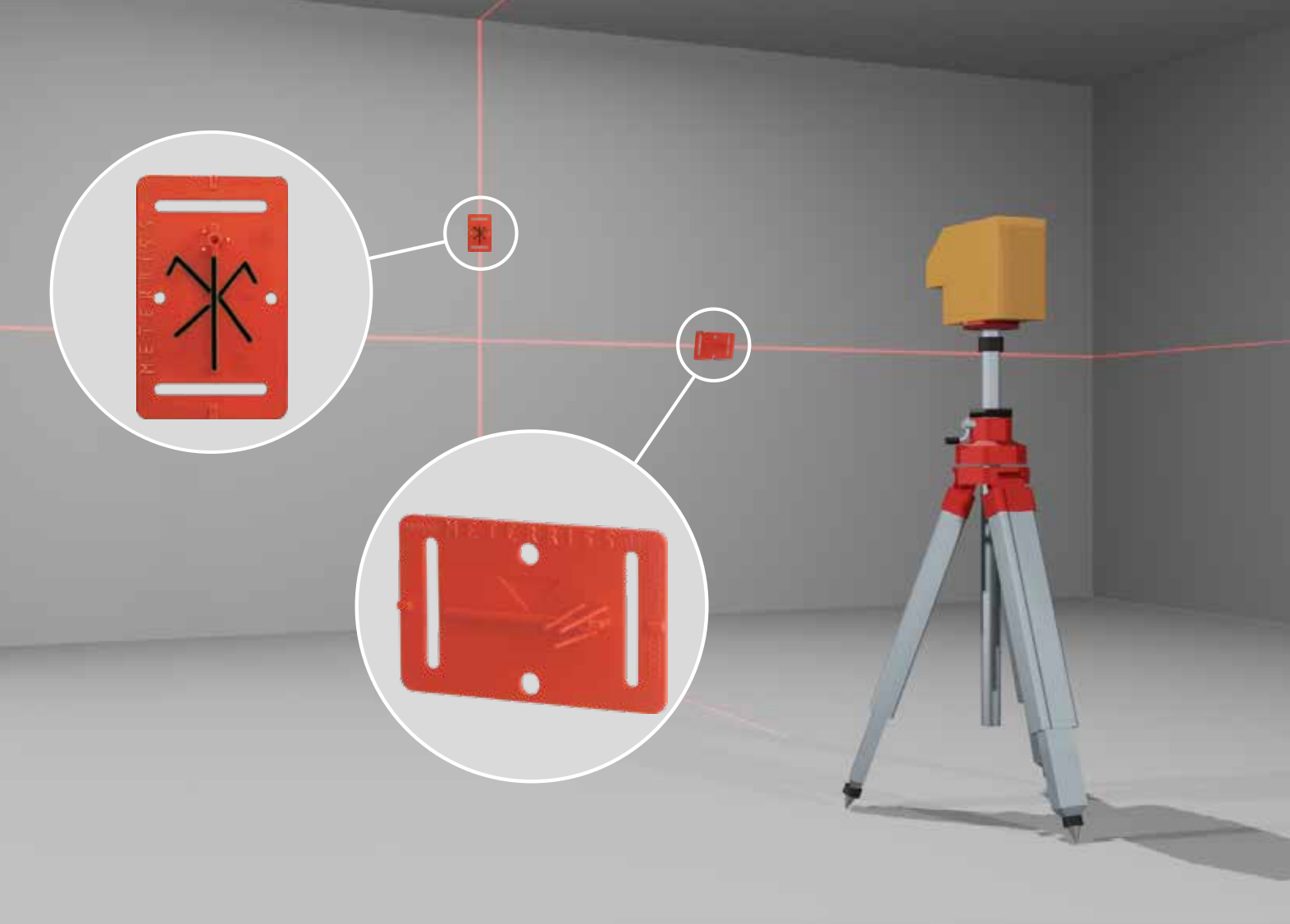
For permanent securing on the axis until the building is completed, the markers are already measured and fastened in the slab formwork or the slab edge formwork on axis. The negative imprints, which are clearly visible for all trades, are used for the dry wall construction and any further indoor installations. The foreman uses the negative imprints at the ceiling edge to transfer the axis right to the freshly concreted ceiling with a string (chalk line) or laser. If required, they can also be used to install the façade.

Datum and axis markers from Rothbucher Systems have been standard on many construction sites worldwide for years.

**Datum and Axis Markers
RS10/RS11***

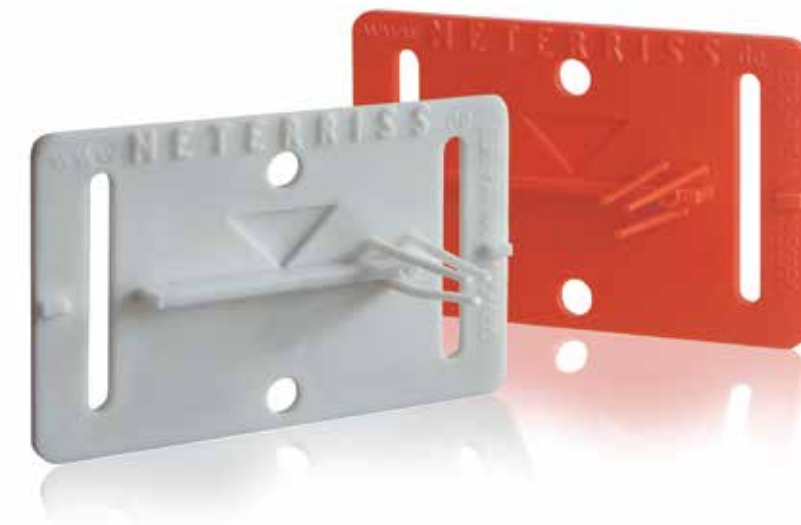


* self-adhesive



For secure marking of datum and axes on building sites with plasterwork.

Datum and Axis Markers RS20 and RS21 *



The markers RS20 and RS21 * are installed on an unplastered or unrendered wall to provide an unambiguous and clear datum such as Finished Floor Level to all tradesmen.

To avoid measurement differences when transferring, the markers have a protrusion to which a ruler can be applied.

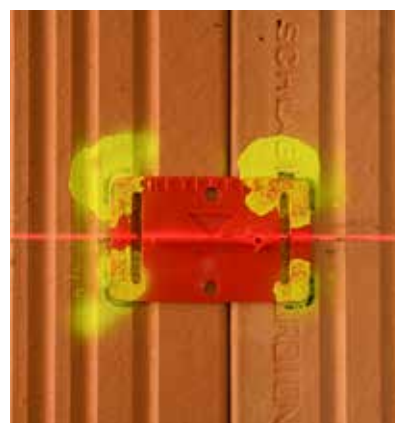
The elastic "stubs" ensure that the datum is stable and visible until after plastering and easy to find again. Heights and axes are also secured until plastering work is complete.

To avoid tampering, the corners are sprayed over with colour. After completing all the works, the flexible "stubs" are easily pinched off, and only little work has to be done for refinishing. The markers remain under the plaster as proof.

We recommend gluing the markers and securing them at least once.



RS21r fixed to a column. The protrusion is cut in 4 – 5 times with a carpet knife.

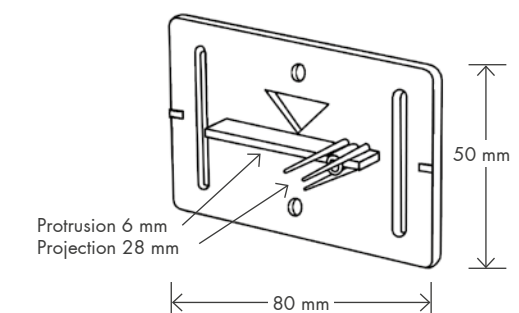


RS21r glued, fastened, and sprayed over with colour to prevent tampering.

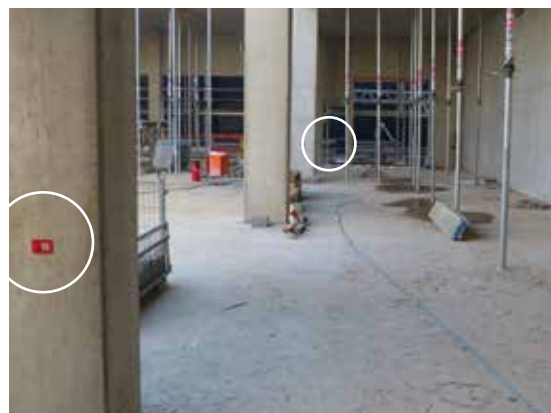


Elastic projection to permanently ensure surveyed measurements are securely marked until after plastering work.

Datum Markers RS20 and RS21 *



* self-adhesive



RS30r in industrial construction: documentation of heights and axes in one product.



RS30r in industrial construction: a perfect measuring point for each measuring instrument.

The height, axis and position number are indicated with number punch or water proof marker pen.



BIM Construction Targets RS30 and RS31* RS40 and RS41*



Perfect reference points for BIM (Building Information Modeling)

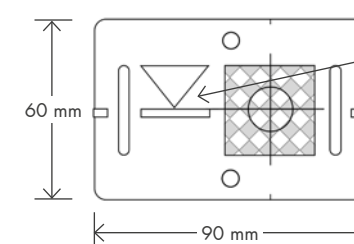
- **Unmistakable fixed points for all trades**
- **A fixed point for all surveying instruments currently used!**

The targets RS30 & RS40 permit documentation and permanent security of heights and axes with a single product. If different measuring devices are at a construction site, the BIM targets are the best solution to avoid measuring differences. No matter if levelling instrument, laser, theodolite or total station are in use, these targets are the perfect surveying point for any instrument!

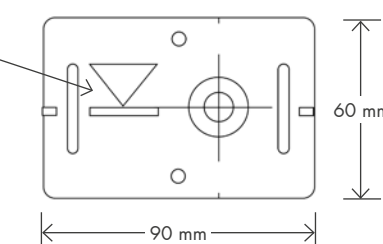
On difficult surfaces, the markers are permanently fastened with adhesive or with plugs and screws. A protrusion where a meter ruler or measuring rod can be placed guarantees the exact measurement of the height.

Crosshairs are imprinted on the backing plate under each reflective target to ensure the survey point is durably marked. Should the reflective target be damaged, its replacement is no problem. There is thus no loss of the original survey point and the uniqueness and durability of the survey point in accordance with BIM are guaranteed.

BIM Construction Targets RS30 & RS31*
with reflective targets 30 x 30 mm

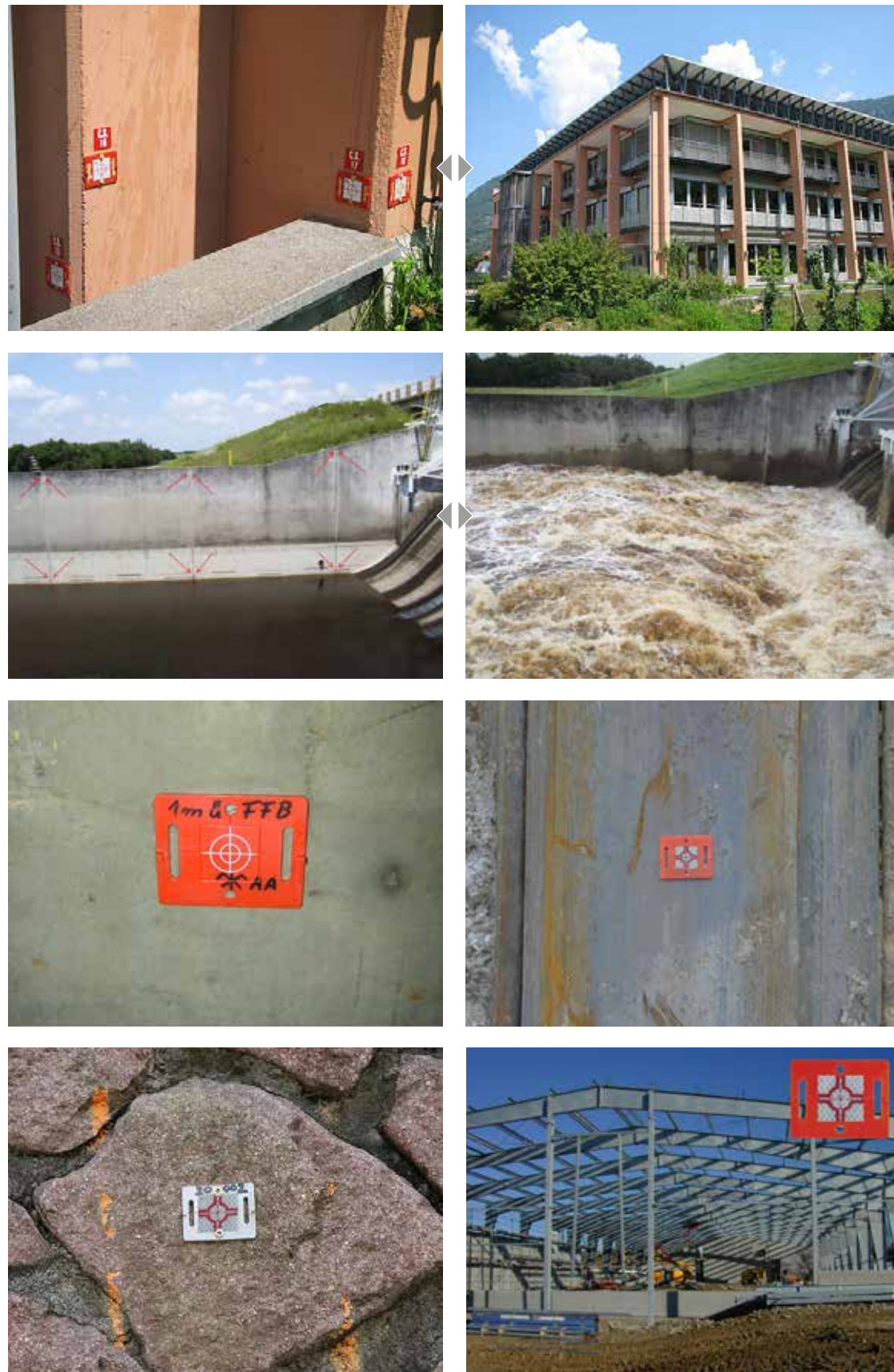


BIM Construction Targets RS40 & RS41*
with crosshairs



Attachment depth
23 mm

* self-adhesive



Smart targets for diverse applications.

Smart Targets RS50+RS51* RS60+RS61* RS70+RS71*



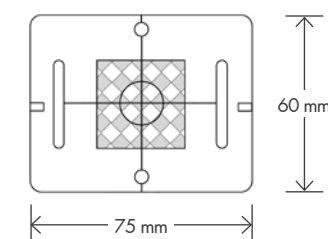
These markers offer very high flexibility in use and they also meet all requirements for their use on BIM-compliant construction sites.

Inside buildings, heights and axes are clearly documented. The transfer of axes to the next floor can be done easily and accurately by means of laser or plumb line to stairwells or other openings. Outdoors they can be fastened permanently to any desired point. There they can be used for positioning with the total station or are used for line marking or for securing heights and axes.

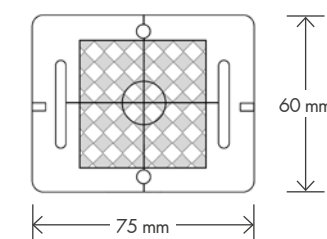
If the markers are fastened to the façade, surveyors and foremen can continue to use them during construction. Uses by façade subcontractors include the measurement of glass or natural stone façades. Furthermore, they are also excellently suited for 3-dimensional observation of such structures as façades, bridges, supporting walls, etc.

Crosshairs are imprinted on the backing plate under each reflective target to ensure the survey point is durably marked. If the reflective target is damaged at any point, it can easily be replaced and the original survey point can be restored quickly, easily and cheaply.

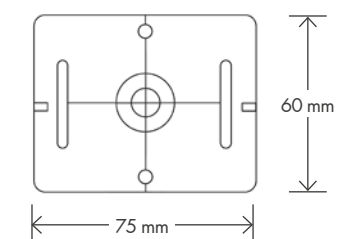
Survey markers RS50/51*
with reflective targets
30 x 30 mm



Smart targets RS60/61*
with reflective targets
40 x 40 mm



Smart targets RS70/71*
with crosshairs



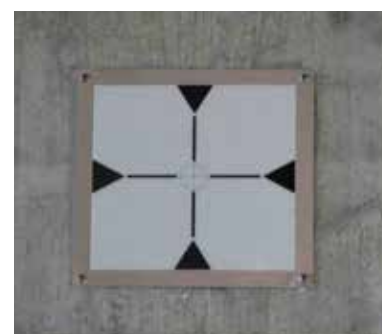
* self-adhesive



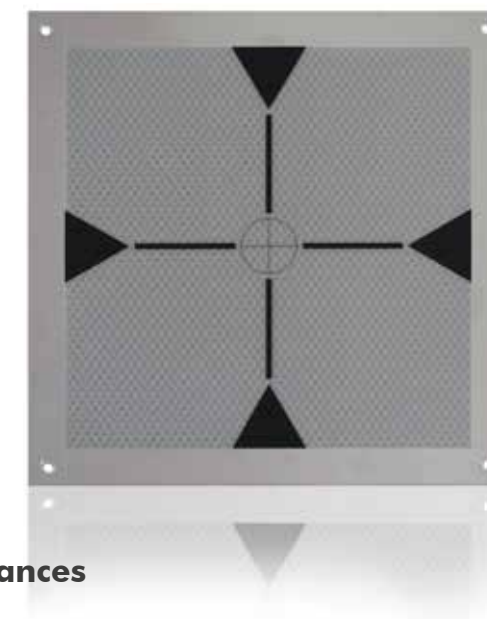
Arabtec Resident Tower
Dubai



Schellingwoude Bridge
Amsterdam



Smart Targets RSAKZ6 and RSALU22



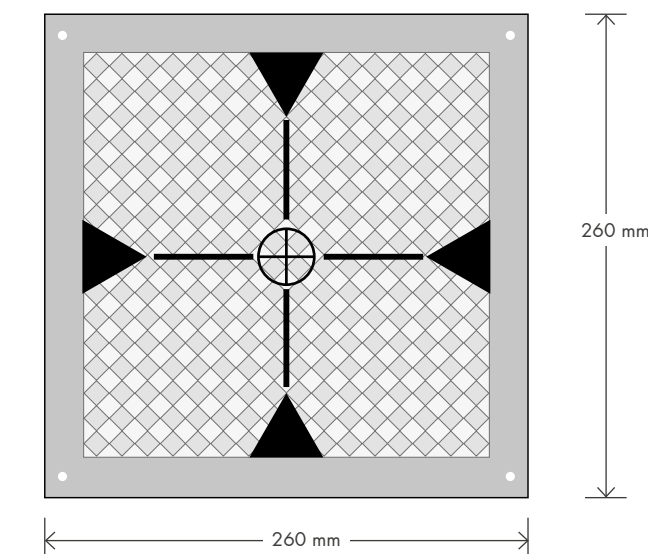
High-Precision across Large Distances

The smart targets RSAKZ6 and RSALU22 are always used where surveying is to be carried out over longer distances.

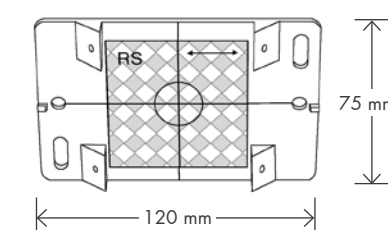
The RSAKZ6 targets are fitted with 60 x 60 mm reflective targets and the range is approx. 120 m up to 250 m and more in reflectorless mode.

The reflective target panels RSALU22 with aluminum panel 260 x 260 mm and reflective 220 x 220 mm targets for measurements up to 500 m.

RSALU22
with reflective target 220 x 220 mm



Smart Targets RSAKZ6
with reflective targets 60 x 60 mm





Subway Station, World Trade Centre in New York City



RS90r, Subway Station, World Trade Centre



RS90g, Metro Rotterdam

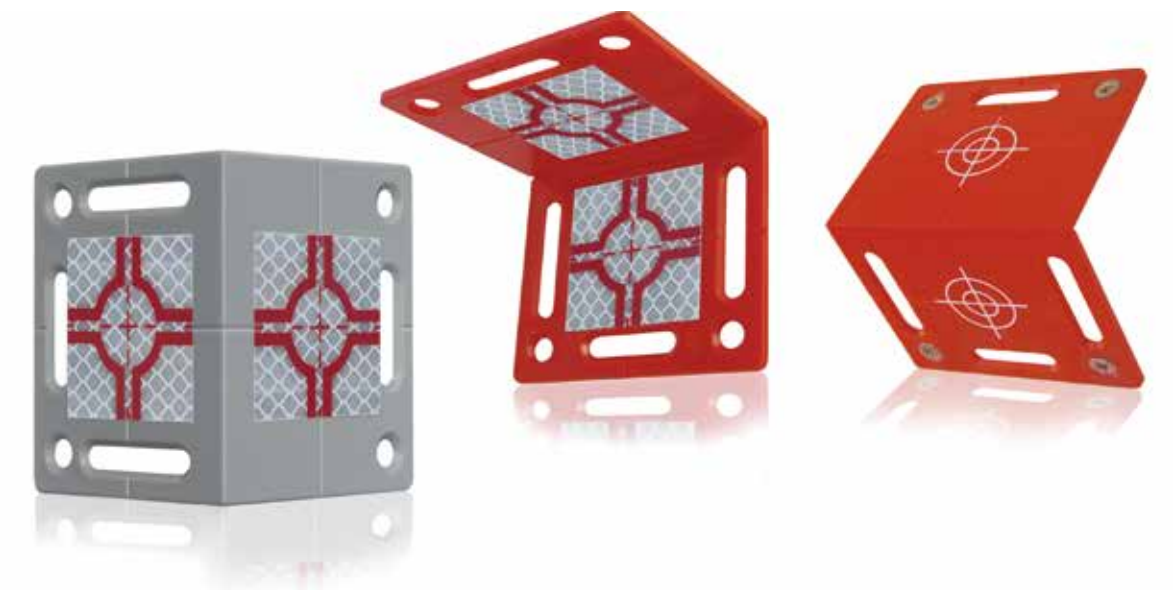


RS80r, Al Sadd Stadium in Qatar



Al Sadd Stadium in Qatar

Smart Angle Targets RS80, RS90 and RS100



Solutions for Difficult Positions

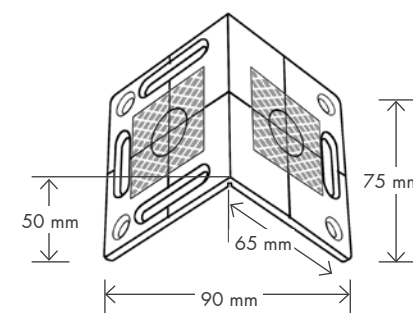
These markers are used wherever difficult surveying positions would make it impossible to sight the measuring points.

The RS80 markers are installed in "roof-shape". For the observation of façades and objects, these plaques are very well suited as a corner solution. If heights and axes are to be transferred from outside to inside or vice versa, the markers can be mounted, for example, on the window reveal. You can then literally measure around corners.

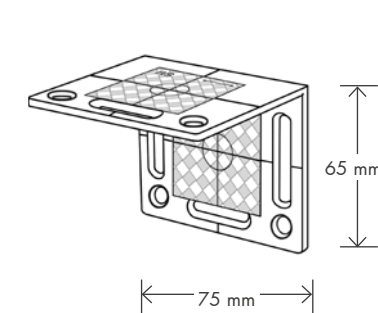
The RS90 markers, permit sighting on the surveying points from almost any position. For example, an axis, can be sighted from the front, below or above.

To ensure that the survey point can be secured over a long period, crosshairs are imprinted on the base plate under each reflective target.

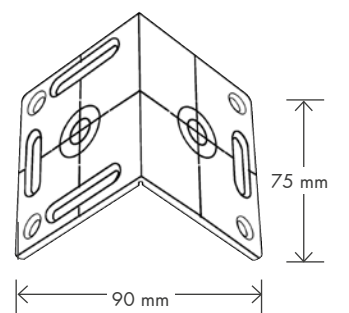
Smart Angle Targets RS80 with
two reflective targets 40 x 40 mm



Smart Angle Targets RS90 with
three reflective targets 40 x 40 mm



Smart Angle Targets RS100
with four crosshairs





Angled Adapters RSAK80 and RSAK130



RSAK80 and RSAK130 are at home on, amongst others rails, bridges, enclosures, dam walls, buildings, supports, high warehouse shelving, glass and stone façades. With well planned installation, the survey point can be sighted from almost any position with these products.

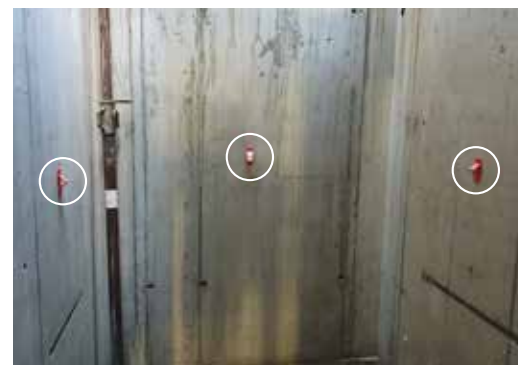
On railway tracks, for example, the surveyor no longer needs to put himself in danger, but can perform his measurements from a safe position at any time. Dangerous and expensive road closures are also no longer necessary, many survey measurements are significantly simplified. 3-dimensional observations are assured when XYZ coordinates are used.

In lift shafts the adapters are mounted to the axis in a vertical line (see illustration on the left). In this way, the axes are clearly visible from any position for all workers.

Crosshairs are imprinted on the backing plate under the exact center of each reflective target to ensure the survey point is durably marked.



Observation of bridges.



RSAK130 mounted on axis in a lift shaft.

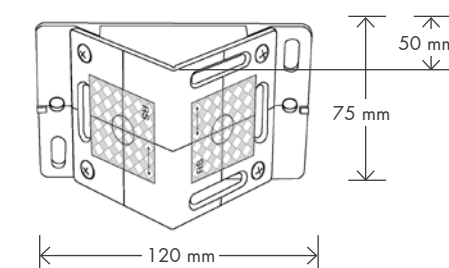


Observation of sound barrier walls.

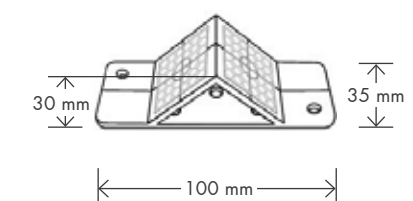


Surveyors no longer need to enter danger areas.

RSAK80
with reflective targets 40 x 40 mm



RSAK130
with reflective targets 30 x 30 mm





Adapter RSAM80 and RSAMG80 Stainless Steel V4A



The adapter with DW15 thread was developed especially for easy and durable mounting for the construction of new bridges. It is screwed into pre-installed anchor sleeves with component adhesive and aligned with the measuring point.

For concrete bridges, anchor sleeves are often concreted into the cantilever arm and in the cap, at spacings of approximately 1 meter. Their location makes them ideally suited for surveying purposes. Annoying holes in heavily reinforced concrete are not necessary. Neither are dangerous and expensive road closures, since the bridges no longer need to be accessed for surveying. For the observation of metal bridges or other metal structures such as avalanche barriers and of earth and rock movements, we offer the adapter RSAM80 without thread, for welding on or dowel fixation.

In the event of damage, the clip system enables the original surveying point to be restored quickly and at minimal cost – unique in the field of surveying accessories!



Survey point on the ski lift support

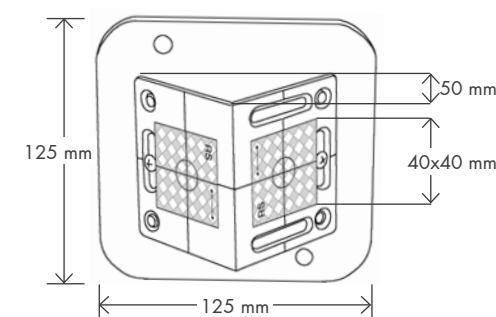


Coen Tunnel Amsterdam

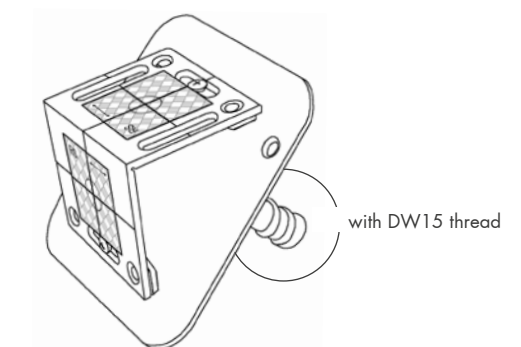


Bridge monitoring (Tappen Zee Bridge USA)

**Adapter RSAM80
with reflective targets 40 x 40 mm**



**Adapter RSAMG80 with DW15 thread
with reflective targets 40 x 40 mm**





Reflective Target with Tilt Function RS183

A product
from our unique
surveying system
**ONE FIXED POINT FOR
ALL INSTRUMENTS**
See page 48



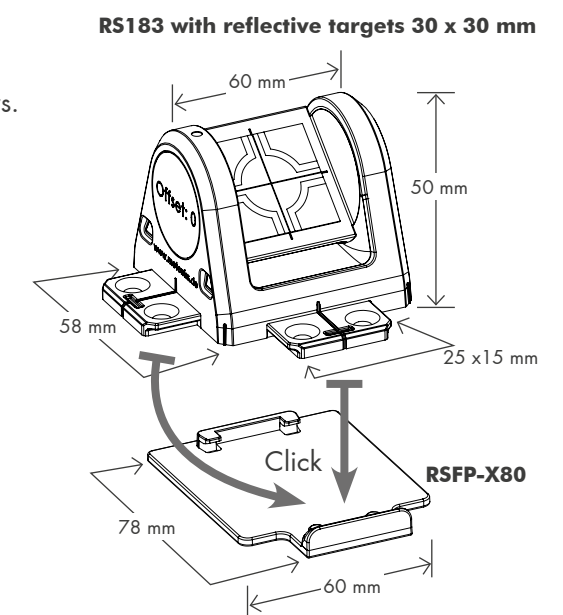
When using total stations, the reflective target can always be aligned precisely with the measuring instrument. The target can be turned through an angle of 180°, making it possible to use the same survey point from different directions. Used in combination with our mounting plate RSFP-X80, the targets can be clicked in into two different orientations, enabling it to be sighted from almost any direction (see illustrations at left).

If the targets are mounted around the site before the start of construction, the foreman and surveyor can always use the same survey point from initial trenching work up to the top floor. Depending on the construction phase, the markers are adjusted to the construction site progress by alignment of the reflective target.

With the integrated plug-in system, several targets can be combined with each other. The targets can be combined in both directions, enabling surveying from different directions without needing to rotate the reflective targets. The spacing of the survey points between the combined markers is always 60 mm.

Mounting adhesive permits quick and simple installation even on difficult surfaces.
Fixing holes permit fastening with plugs and screws.

Offset: 0
Tilting axis height: 30 mm



RS183 on mounting plate RSFP-X80g for simple and fast mounting on any base. Simply click out, turn and click in again to survey in both horizontal and vertical orientations with the same survey point.

Reflective Targets RS193 and RS193M*

Target Markers RS192M*



Reflective targets and target markers that can be rotated through 360° and tilted!

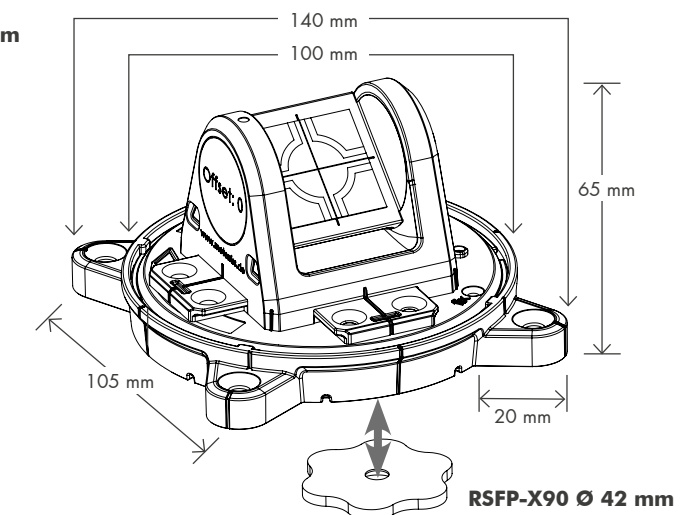
The reflective targets RS193 and RS193M* can be rotated through 360° and always aligned precisely with the surveying instrument. The same survey point can thus be used from all directions. When using fixed point RSFP-X90, the targets can be removed and later replaced on the same survey point.

The RS192M targets are used for positioning and surveying with the following instruments:
Leica 3D Disto, GeoMax Zoom 3D and Flexijet 3D.

With the magnetic Target RS192M, you can, in addition, use the resumption point RSFP-X90 – see page 49. If required, the specially developed protective cap RSPC10 protects the reflective targets from fouling.

RS192 with target markers 20 x 20 mm
RS193 with reflective target markers 30 x 30 mm

Range approx. 80 m
Offset: 0
Tilting axis height: 45 mm

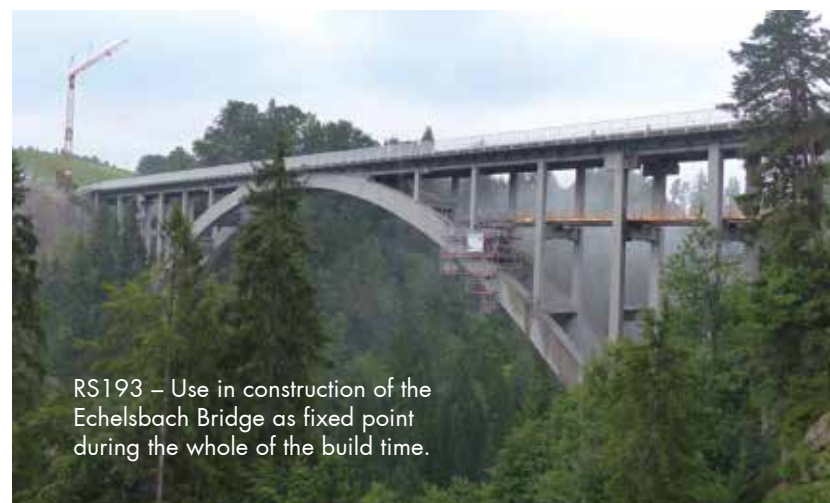


* magnetic

Accessories for these products on pages 49 to 53



RS193M with resumption point RSFP-X90 on the batter board. In this case the fixed point rotates exactly on the axis.



RS193 – Use in construction of the Echelsbach Bridge as fixed point during the whole of the build time.

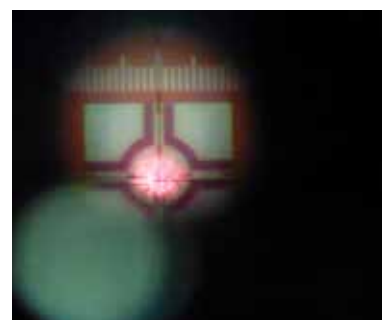


Example of the use of RS193rM as a fixed point on different surfaces and for the exact alignment of the drill carriage.

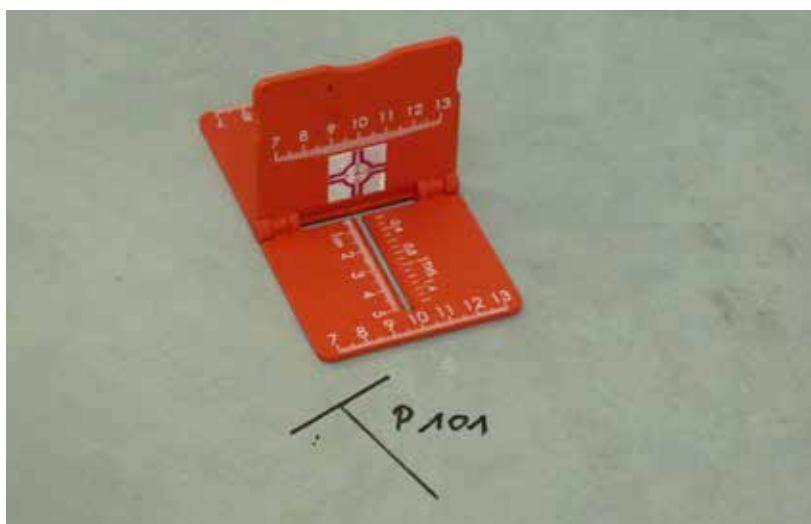




RS95 – Stake out work on the batter board.



RS96 – Stake out work on the floor slab.



Stake Out Aids RS95 and RS96 with reflective target and RS97 with non-reflective target



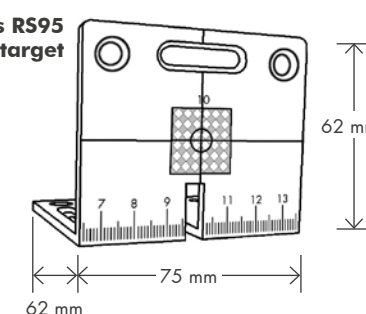
Stake out aids RS95, RS96 and RS97 were developed specifically for setting out work on the batter board and on a floor slab. Exact measurement of the survey point on the floor slab often causes major problems particularly in the "final phase" with the last 5-10 cm. The work is very time-consuming due to the continual side to side, backwards and forwards with the prism pole and the prism pole always has to be exactly plumb. The stake out aids RS95 or the folding stake out aid RS96 or RS97 is placed on the floor and, thanks to the inscribed measurement scales, the assistant can understand and transfer the surveyor's directions quickly and exactly.

Advantages of the stake out aids:

- They make surveying the axes on the batter board easier
- Dimensions on the floor slab can be surveyed quickly and exactly
- The surveyor's specified measurements can precisely be transferred to the floor slab
- There is no prism pole to be set plumb
- Orientation scales for left and right: the number 10 corresponds to the axis
- Orientation scales for backwards and forwards
- Foldable: fits in any shirt pocket and in any instrument case! (RS96/RS97)
- With but little practice, the time saving becomes enormous

**Stake Out Aids RS95
with reflective target
20 x 20 mm**

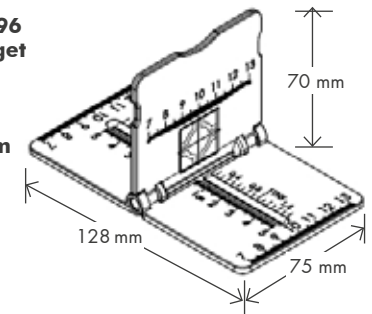
**Target height:
30 mm**



**Stake Out Aids RS96
with reflective target
20 x 20 mm**

**RS97 with target-
marker 20 x 20 mm**

**Target height:
20 mm**





Mini Prisms RSMP10, RSMP12 and RSMP15



RSMP10 with 12.7 mm and RSMP12 with 17.5 mm mini prism

With the mini prisms RSMP10 and RSMP12, surveyors can now measure in gaps, holes and corners easily and quickly. Fixed dimensions (see product drawings) give the surveyor the exact path from the point of measurement to the base of the housing or the tip of the spike. In forensics, the use of prisms include the exact surveying of bullet holes.

PLEASE NOTE: For precise measurements, the prism must be exactly aligned with the surveying instrument!

When using the mini prisms for settlement measurements, the spikes can be removed and thus be inserted or glued into the smallest cracks or holes. On façades, historical buildings, supports and lots of other objects, monitoring is possible with measuring points that are barely identifiable by the general public. At concrete or masonry objects, small holes can be drilled to countersink the prisms flush with the surface.

Angle Plate RSMP15 with 12.7 mm mini prism

For quick mounting, RSMP15 with 12.7 mm mini prism is easily glued, even to difficult surfaces such as glass and marble façades, historic buildings, steel girders, rails, gas and oil pipelines. Depending on substrate and application, the parts can also be fixed with plugs and screws.

When using robotic total stations:

- Permanent settlement monitoring can be carried out during the building work
- Settlement measurements on railway tracks are possible while under the load of rail traffic
- Bridges and other structures can be monitored even more quickly and precisely

The prisms can be used at an angle of up to 30°. In the event of problems with the angle or when measuring from greater distances, we recommend our tilting mini prisms RSMP280 and RSMP380 – see following pages.



RSMP15 Hearst Castle USA



RSMP15 for surveying with robotic total station while under load.

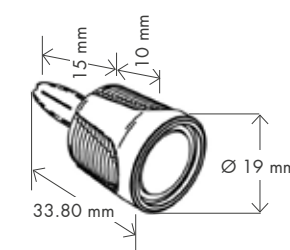


RSMP10 can be placed in the smallest gaps.

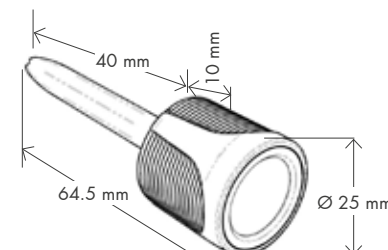


RSMP12 – almost invisible to passers-by.

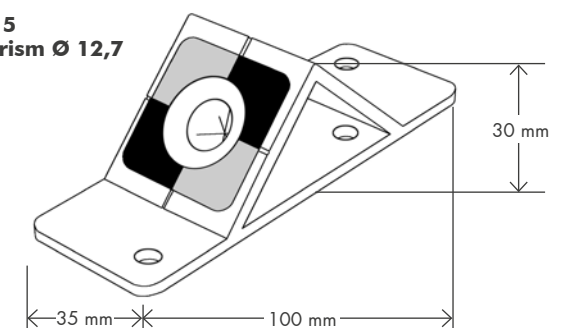
RSMP10 mini prism Ø 12,7



RSMP12 mini prism Ø 17,5



RSMP15 mini prism Ø 12,7



RSMP10 with Ø 12.7 mm mini prism: offset -5.6 (minus 5.6) [Leica +28.8]
 RSMP12 with Ø 17.5 mm mini prism: offset -5.4 (minus 5.4) [Leica +29.0]
 RSMP15 with Ø 12.7 mm mini prism: offset -5.6 (minus 5.6) [Leica +28.8]



Products
from our unique
surveying system
**ONE FIXED POINT FOR
ALL INSTRUMENTS**
See page 48

Tilting Mini Prisms RSMP280 and RSMP380



Mini prism RSMP280 with silver coated Ø 17,5 mm prism, tilting and combinable
Mini prism RSMP380 with silver or copper coated Ø 25,4 mm prism, tilting and combinable

Proven precision – “White Paper” on these products available!

When using these mini prisms, the measuring points can always be exactly aligned with the measuring instrument and turned through 180°. This enables the same survey point to be used from different directions.

Bridges, façades and lots of other objects can thus be monitored more quickly and precisely. The integral plug-in system enables prisms to be combined with one another, permitting surveying from different directions without needing to rotate the prism.

Using the mounting plate RSFP-X80, you can easily fix the prisms, even on difficult surfaces, by means of our RSMK-Fix mounting adhesive. After completion of the survey, they can be removed quickly and easily and, if need be, re-affixed. The mounting plate RSFP-X80 is designed in a way so that the prisms can be clipped in - exactly centered - in two directions.

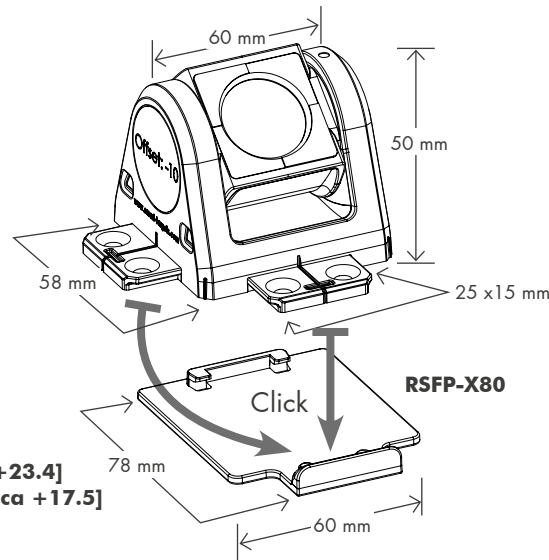
The same survey point can thus be used from almost all directions. If the mounting plate RSFP-X80 is used in high-vibration environments (e.g. if mounted on railway tracks), the prisms can be secured to the mounting plate with small screws. Fastening them with plugs and screws is also possible.

With mini prism RSMP280, ranges of 300 m to 500 m can be achieved in ATR mode.
 With mini prism RSMP380, ranges of 500 m to 700 m can be achieved in ATR mode.

The ranges depend on the survey instrument and are influenced by weather and ambient conditions.



RSMP280 with Ø 17.5 mm mini prism: offset -11 (minus 11) [Leica +23.4]
RSMP380 with Ø 25.4 mm mini prism: offset -16.9 (minus 16.9) [Leica +17.5]
Tilt axis height, RSMP280 and RSMP380: 30 mm



Simple and fast fitting on any substrate.



RSMP380 with mounting plate RSFP-X80g.



Monitoring of HMS Victory in the Historic Dockyard, Portsmouth.

Mini Prisms RSMP290 and RSMP290M* Mini Prisms RSMP390 and RSMP390M*

Products
from our unique
surveying system
**ONE FIXED POINT FOR
ALL INSTRUMENTS**
See page 49



Mini prism RSMP290(M*) with silver coated, Ø 17.5 mm prism, can be rotated and tilted
Mini prism RSMP390(M*) with silver or copper coated, Ø 25.4 mm prism, can be rotated and tilted

Proven precision – “White Paper” on these products available!

Even on difficult surfaces, such as glass and marble façades, historic buildings and gas or oil pipelines, these prisms can easily be mounted with adhesive. For easy installation on steel structures, magnetic versions of the base plates are also available. Depending on the surface, mounting with plugs and screws is also possible.

When using total stations or robotic total stations:

- The prism can always precisely be aligned with the survey instrument
- The prism can be rotated through 360°, enabling the same survey point to be used from almost any direction
- Bridges, façades and many other objects can thus be monitored more quickly and precisely
- Permanent settlement monitoring can be carried out during the building work

With mini prism RSMP290, ranges of 300 m to 500 m can be achieved in ATR mode.
With mini prism RSMP390, ranges of 500 m to 700 m can be achieved in ATR mode.

The ranges depend on the survey instrument and are influenced by weather and ambient conditions.

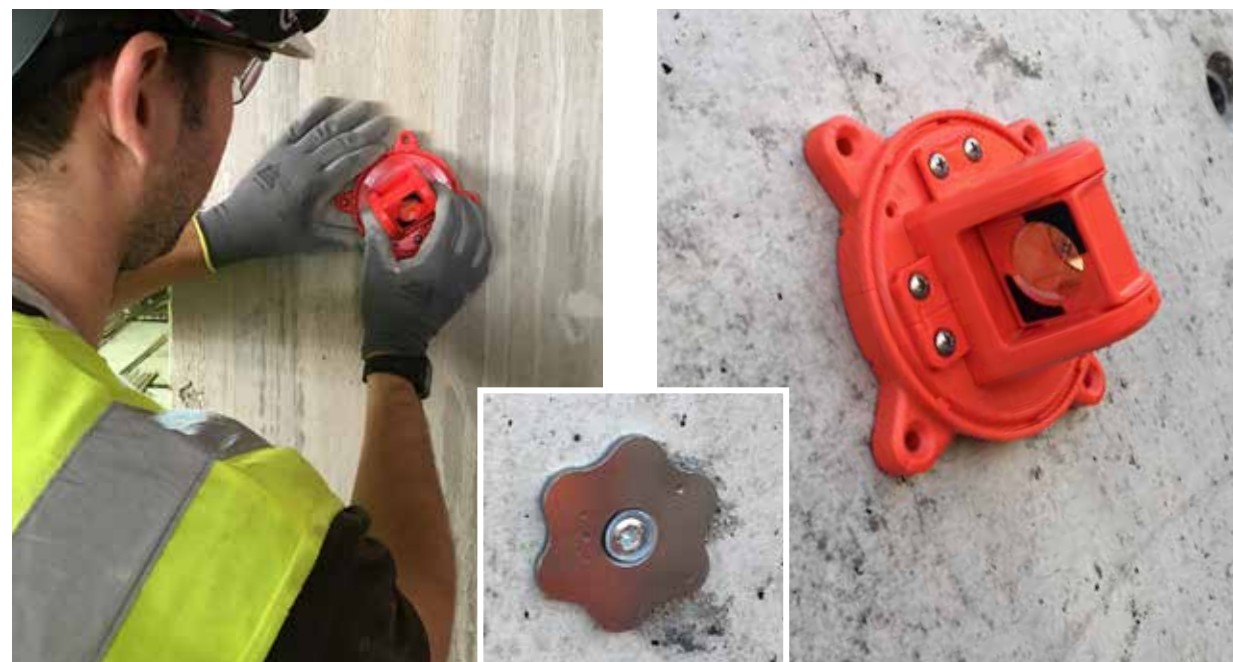
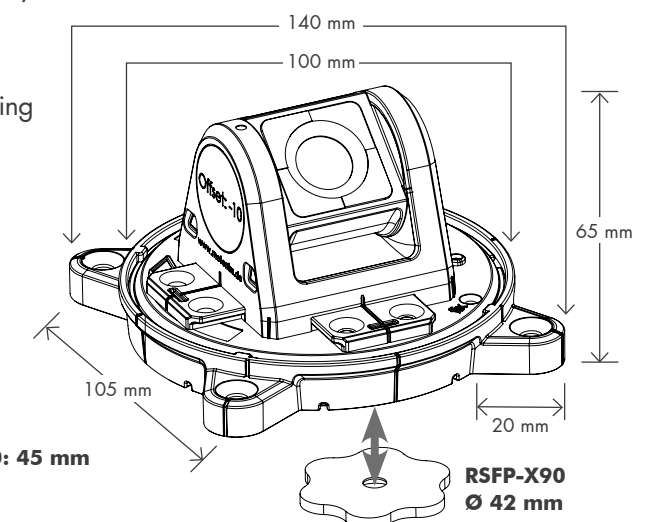
When sighting survey points that are already known,
ranges of up to 1000 m can be achieved
with robotic total stations!

For measurements in manual mode, depending
on the focus, ranges of approx. 200 m
can be obtained.

**RSMP290 with Ø 17.5 mm mini prism:
offset -11 (minus 11) [Leica +23.4]**

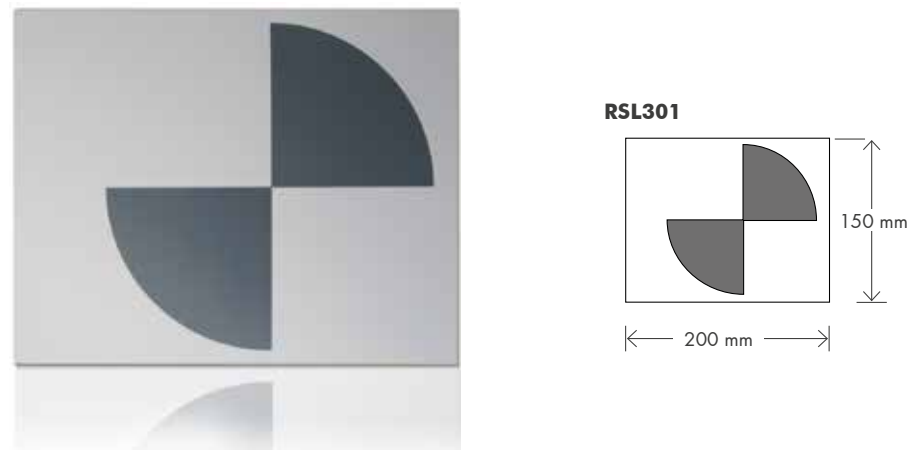
**RSMP390 with Ø 25.4 mm mini prism:
offset -16.9 (minus 16.9) [Leica +17.5]**

Tilting axis height for RSMP290 and RSMP390: 45 mm



RSFP-X90 (small picture, centre) as restore point for mini prism RSMP290M or RSMP390M

Laser Scanner Targets RSL301*



- Ideally suited for use with scanners from Leica, GeoMax, Faro and ZF
- Provide fixed points for linking multiple viewpoints
- For the assignment of spatial reference information to a geospatial data set
- With inscription space for clear assignment of measurement points
- Quickly and easily mounted
- Waterproof
- Suitable for indoor- and outdoor use

The laser scanner target RSL301 is self-adhesive. If the marker is used indoors on smooth surfaces, the self-adhesive effect can be reused a number of times.



* self-adhesive

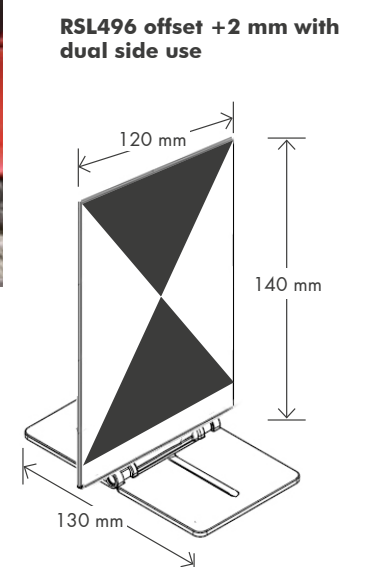
Foldable Laser Scanner Targets RSL496



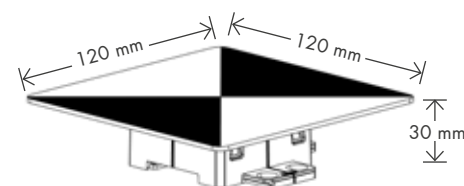
- Ideally suited for use with scanners from Leica, GeoMax, Faro, ZF and Trimble as well as the scan function of the Leica MS50 and for the RIEGL VZ 400 from a distance of 50 m
- Fixed points for connecting several positions
- Assignment of spatial reference information to a geospatial data set.
- Can be used from two sides since it is printed on both sides (offset + 2 mm)
- Suitable for indoor- and outdoor use
- This target can be folded flat for storage when not in use
- No need to carry bulky tripods



Marking through a slot in the base plate makes repeated measurements possible.



Laser Scanner Targets RSL-X80



- Ideally suited for use with scanners from Leica, GeoMax, Faro, ZF and Trimble
- Provides fixed points for linking multiple viewpoints
- Assignment of spatial reference information to a geospatial dataset
- Higher accuracy since the fixed point can be surveyed with total station in advance (with the mini prisms RSMP280 or RSMP380) – see page 48
- If need be, all markers can also be permanently glued or fixed.



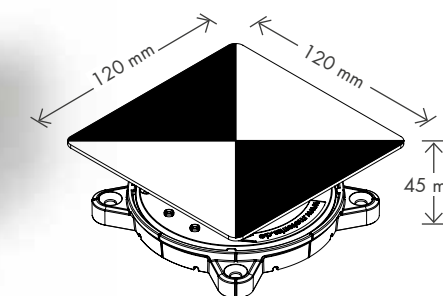
For repeat surveys,
only the reference
point (**RSFP-X80**)
remains on the object
(e.g. on a façade).



With the adapter **RSA-X80g-1**, the laser scanner target
can exactly be fitted above the measuring point of the
RS mini prisms RSMP280 and RSMP380.

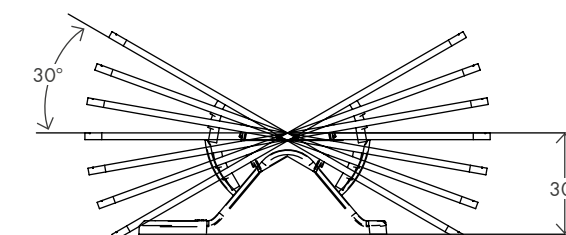


Laser Scanner Targets RSL-X90M*



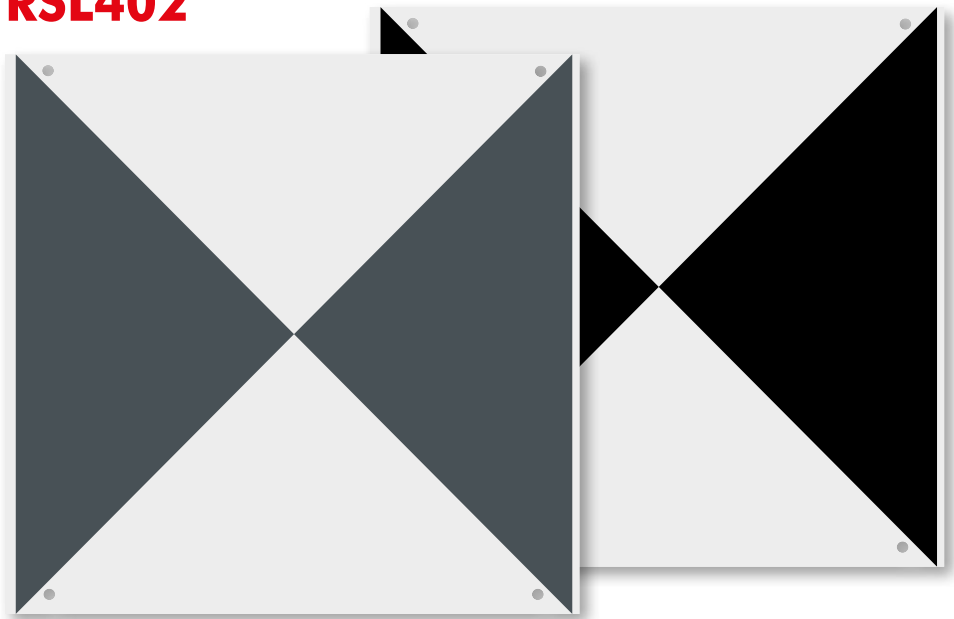
- Ideally suited for use with scanners from Leica, GeoMax, Faro, ZF and Trimble
- Provides fixed points for linking multiple viewpoints
- Assignment of spatial reference information to a geospatial data set.
- Higher accuracy since in advance, the fixed point can be surveyed with total station (with the mini prisms RSMP290M* and RSMP390M*) – see page 49
- If need be, all markers can also be permanently glued or fixed

For repeat measurements,
only a small, barely visible,
stainless steel survey mark
(**RSFP-X90**) is left on the
object as a reference point
(e.g. on a façade).



* magnetic

Alu Dibond Laser Scanner and Drone Plate RSL402

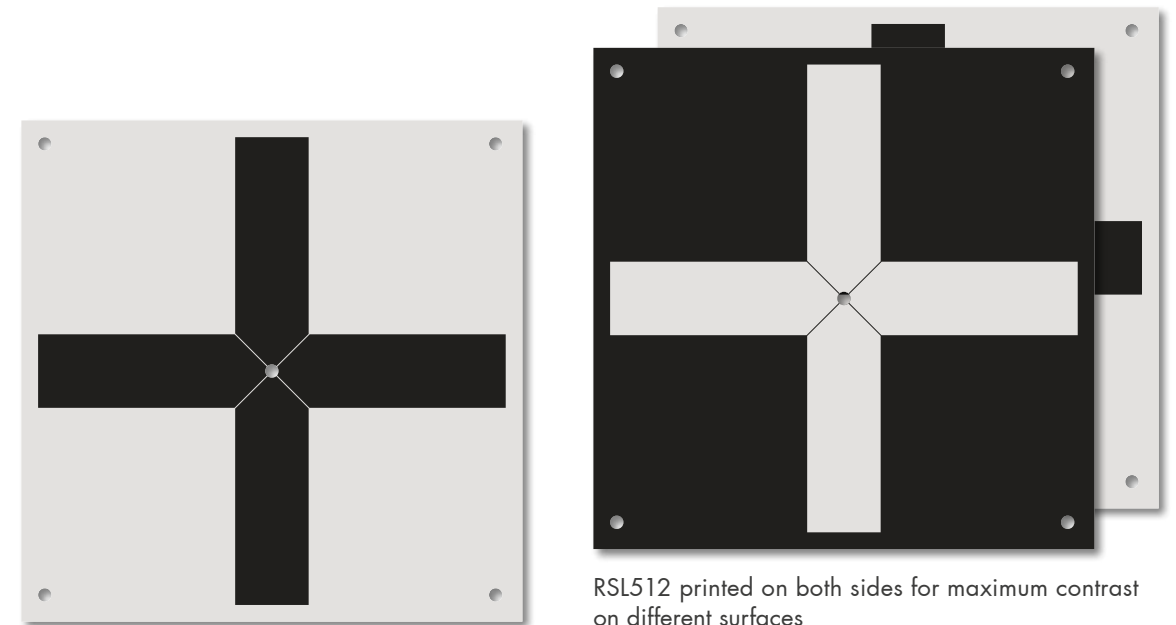


Laser scanner plate, 400 x 400 mm, for long range scanning.
The rear face, printed in black & white, can be used as a ground marker for drones.

- When using mobile mapping systems, the plates can even be recognized at speeds of up to 80 km/h (50 miles/h)
- Because of their size and shape, the plates can also be used for orienteering in systems for autonomous driving
- Can be secured to the ground with tent pegs



Drone Ground Markers RSL510 and RSL512

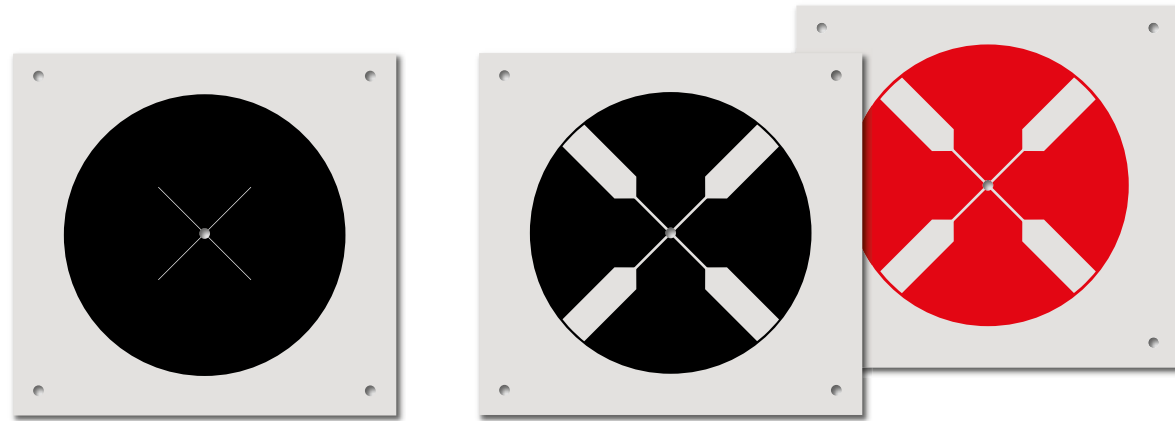


RSL512 printed on both sides for maximum contrast on different surfaces

- Large, waterproof target marker 350 x 350 mm
- Fixed points for use with drones
- A central hole permits exact calibration by GPS
- Can be secured to the ground with tent pegs
- Can be used lots of times



Drone Ground Markers RSL520 and RSL532

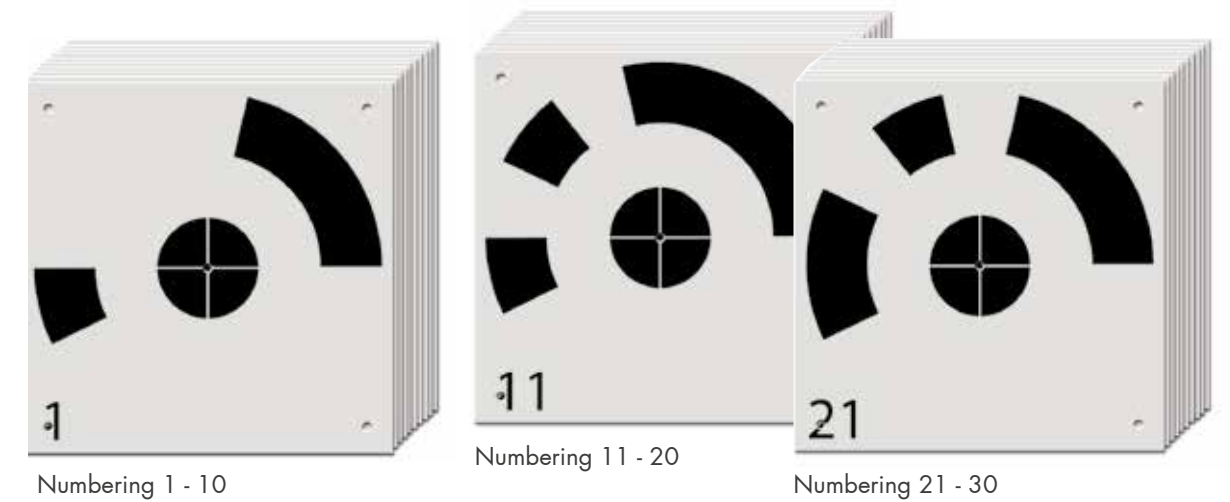


- Large, waterproof target markers 350 x 350 mm
- Fixed points for use with drones
- A central hole permits exact calibration by GPS
- Can be secured to the ground with tent pegs
- Can be used lots of times



RSL532 in use on both sides for maximum contrast on different surfaces

Drone Ground Markers RSL570-10, RSL570-20 and RSL570-30

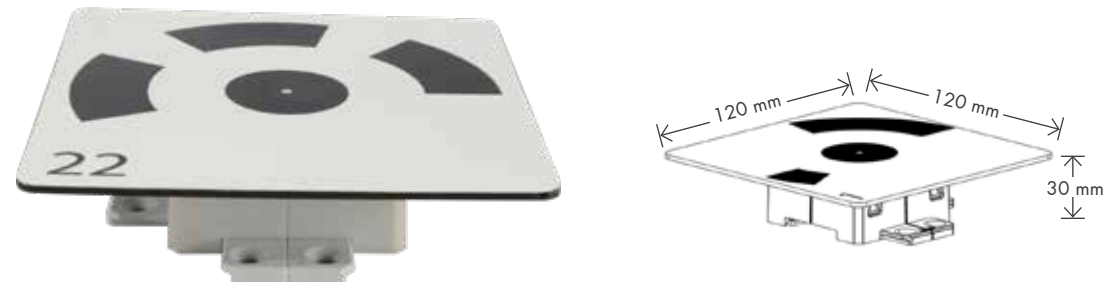


- Large, waterproof target markers 350 x 350 mm
- Fixed points for use with drones
- A central hole permits exact calibration by GPS
- Can be secured to the ground with tent pegs
- Can be used lots of times
- Automatic number recognition with appropriate software such as: Agisoft



NOTE: the recognition of these markers from heights above 40 meters is only possible with good equipment!

Drone Markers RSL580-10 and RSL580-20



Still higher accuracy when using scanners and drones.

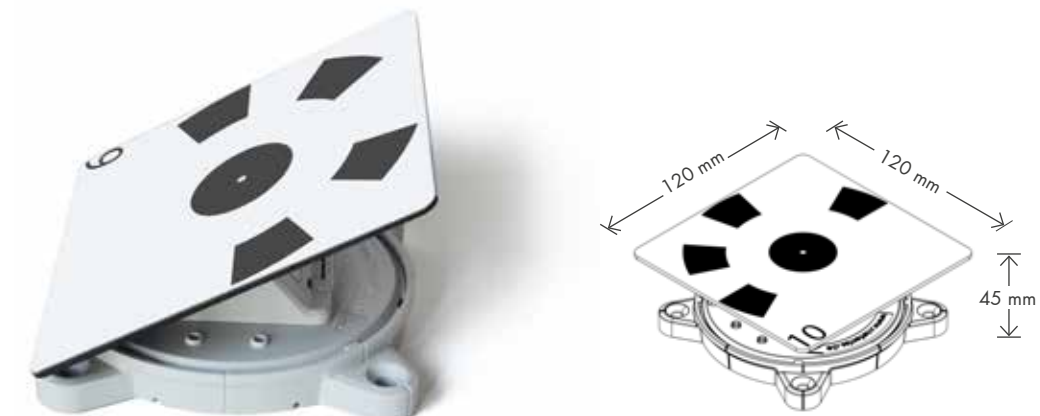
Combined with the fixed point RSFP-X80, the reference points can first be surveyed very exactly with our mini prisms (e.g. RSMP380). The drone markers RSL580 can then be clipped into the same fixed point for the use of drones (see page 48). With adequate quality of the cameras or surveying instruments, accuracies of ± 1 mm can be achieved.

In combination with the adapter RSA-X80g-1, the RSL580 drone markers can be placed very exactly above the surveying point of the mini prism. With the adapter RSA-5/8-1, this combination can be mounted on any current tribrach or tripod with 5/8" unc stud. See illustrations below.

With high-quality cameras, accuracies of ± 1 mm have already been achieved from an altitude of 35 meters!



Drone Markers RSL590M-10* and RSL590M-20*



Combined with the fixed point RSFP-X90, the reference points can first be exactly surveyed with our mini prisms (e.g. RSMP390M*).

The drone markers RSL590M* can then be placed on the reference points for the use of drones (see page 49).

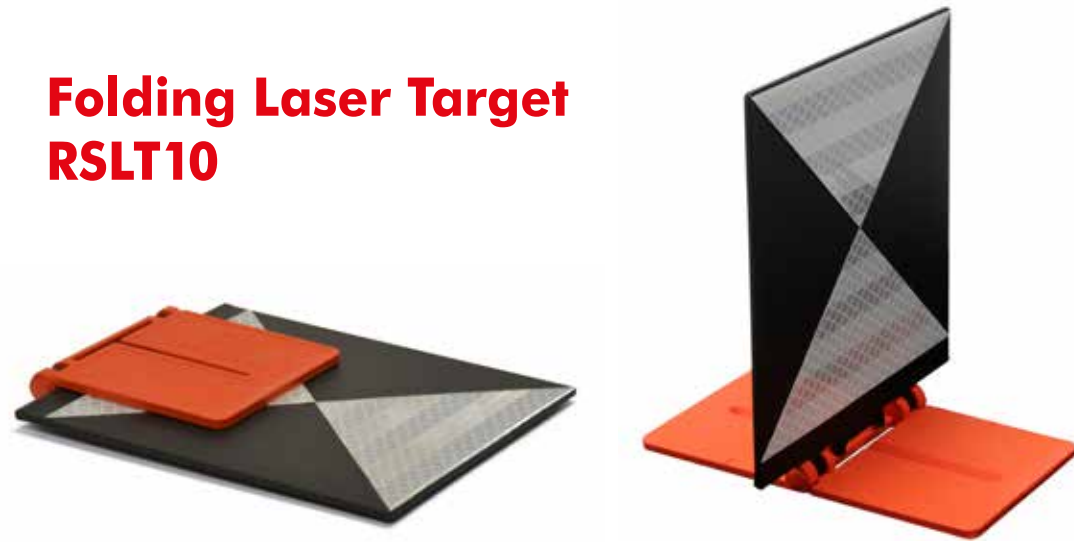
Very exact assignment of spatial reference information to a geospatial data set is thereby achieved. Accuracy ± 1 mm.

For repeat measurements, only a small, barely visible, stainless steel survey mark (RSFP-X90) is left on the object as a reference point (e.g. on a façade).



* magnetic

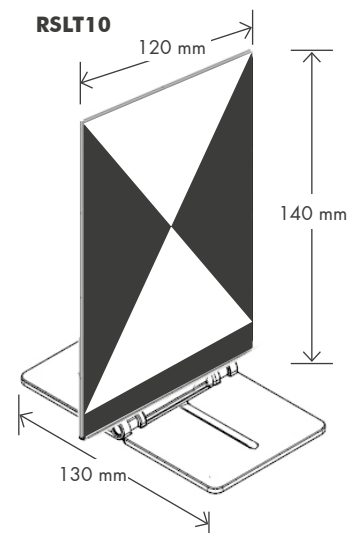
Folding Laser Target RSLT10



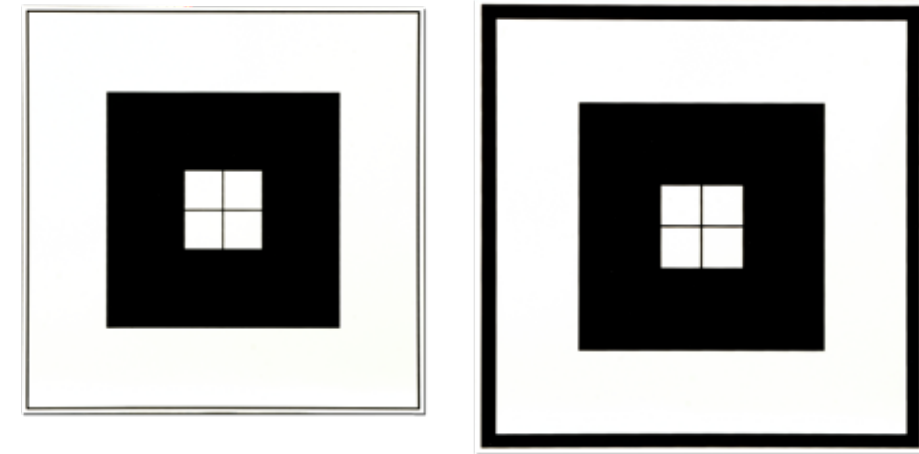
The laser target RSLT10 was developed for the fast and exact alignment of a line laser on axis. The laser target can be folded down and can therefore be stored in the laser box or stowed away in another space saving place.

Place the laser target on the axis on which you want to align the laser. Turn the laser with active axis line in the area of the laser target to left and right until you see the laser line on the laser target and align the laser on the center of the target.

Please note: For alignment, your head must be at the same height as and next to or behind the laser. Only then can the reflection of the laser line from the target be clearly seen and, even in bright sunlight, be used at a range of up to 30 m.



Laser Targets RSLT151* and RSLT200



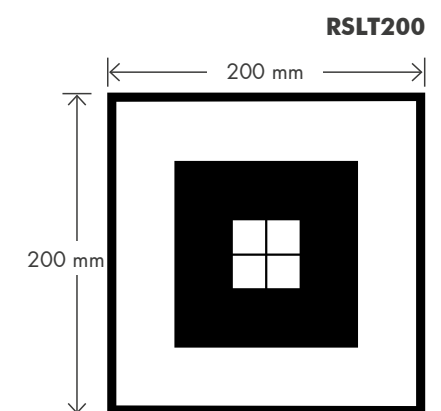
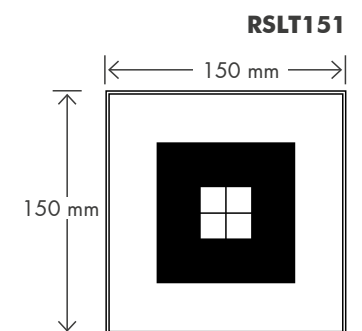
These laser targets are used for quick positioning or when moving the following instruments:

- **Leica 3D Disto**
- **GeoMax Zoom 3D**

The Laser Target RSLT151 is self-adhesive. If the target is used on smooth, interior surfaces, the self-adhesive effect can be reused several times.

The laser target RSLT200 can be affixed to any surface with mounting adhesive.

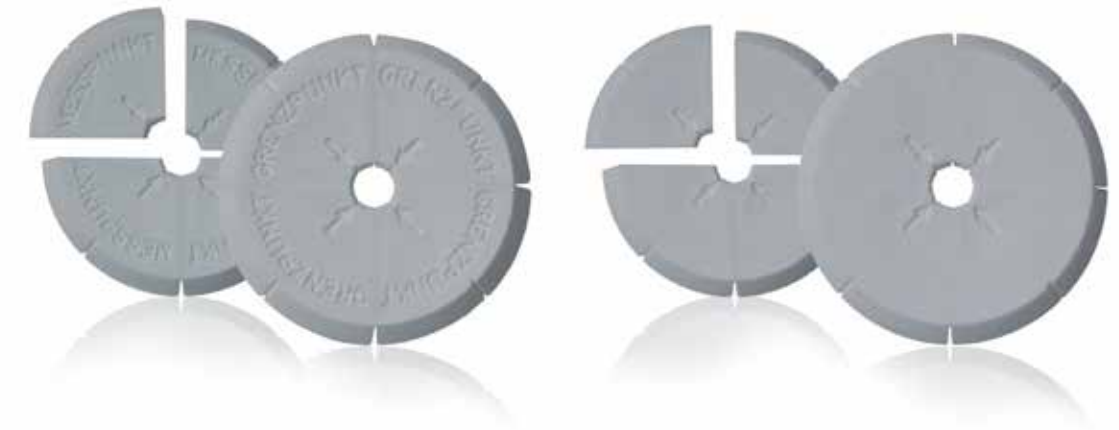
Both targets are waterproof and temperature and UV-resistant and suitable for use both indoors and outdoors.



* self-adhesive



4/4 Boundary Markers RSKM10 to RSKM40



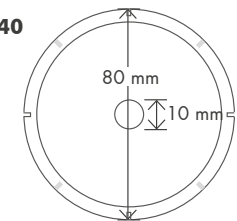
These boundary markers can be used as 1/4, 1/2 and 3/4 boundary or measuring points. They ensure the correct measurement of boundary and fixed points on firm surfaces within local areas.

Precise documentation is ensured at inner corners, at a partition or wall and at outer corners. The glued markers are readily fixed to the substrate with the mounting adhesive RSMK-FIX.

The following products are available:

- RSKM10: 4/4 Boundary Markers without inscription
- RSKM20: 4/4 Boundary Markers with inscription "GRENZPUNKT"
- RSKM30: 4/4 Boundary Markers with inscription "MESSPUNKT"
- RSKM40: 4/4 Boundary Markers with inscription "SURVEY MARK"

RSKM10-40



Measuring Point RSFP1 and RSFP1-A



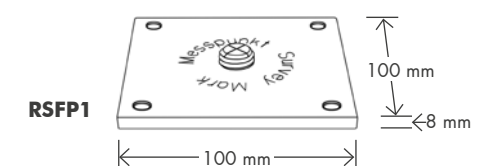
When used as a fixed point on the ground, this point should be surveyed with a prism so that if necessary for example, if it is suspected that the fixed point has been moved due to outside interference, it can be checked quickly and easily.



RSFP1-A

The aluminum plate RSFP1 is fitted with a 5/8" unc stainless steel stud for screwing on a prism or a measuring instrument. If the plate is used as a fixed point on the ground, the surveyor can position his instrument on his tripod precisely above the cross.

RSFP1 is supplied with a plastic or aluminum protective cap for the 5/8" unc stud.



**ONE
FIXED POINT
FOR ALL
INSTRUMENTS
RSFP-X80**

Universal Mounting Plate RSFP-X80 (Resumption Point)

**One reference point for all surveying
instruments currently used!**



- Depending on the instruments, accuracies of ± 1 mm are possible
- With the mounting plate RSFP-X80, various products can be fixed well and quickly. At the end of the survey, only the low-cost mounting plate (resumption point) remains on the object as a reference point
- On building sites, the mounting plate RSFP-X80 is used as a reference point.
- When using the reflective target RS183 or the mini prisms RSMP280 and RSMP380, these can be changed from horizontal to vertical orientation and vice versa. This permits surveying from almost anywhere on a 360° circle using the same measuring point



**ONE
FIXED POINT
FOR ALL
INSTRUMENTS
RSFP-X90**

Resumption Point RSFP-X90

**One reference point for all surveying
instruments currently used!**



- Depending on the instruments, accuracies of ± 1 mm are possible
- The resumption point RSFP-X90 is made of special stainless steel which reacts to magnets
- Magnets in the base plate hold various products exactly on the required point
- For repeat surveys, the resumption point RSFP-X90 is much appreciated, as it is almost invisible to passers-by
- On building sites, the resumption point RSFP-X90 is used as a reference point

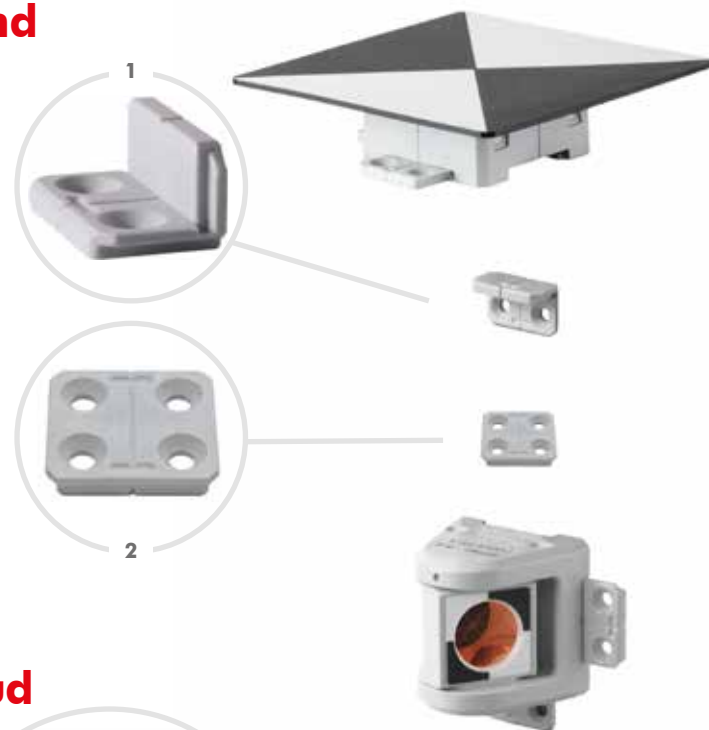


Accessories

Adapters RSA-X80g-1 and RSA-X80g-2

With the angle bracket adapter RSA-X80g-1 and the adapter RSA-X80g-2, plug-in combinations of the products RS183, RSMP280, RSMP380 can be built or the RS mini prisms can be combined with the scanner targets and drone markers RSL-X80 and RSL580. For example: RSMP380 and RSL-X80, see page 36.

This opens the way to entirely new possibilities in surveying and very high accuracy is achieved in images with scanners or drones.



Adapter with 5/8" unc stud RSA-5/8-1

With the adapter RSA-5/8-1, many further combinations can also be easily mounted on a tripod.

See drone marker, page 42.

When mounting the new scanner targets on the tripod, the adapter RSA-5/8-1 is additionally used as a connecting piece. See illustration, page 2.



In Combination

Thanks to our extensive RS surveying accessory system, different surveying instruments can use the same reference point or measurements can access exactly one measurement point with different survey instruments.

The illustration on the right shows one of the various combinations that are possible thanks to the clever plug-in system and the ever growing range of accessories available at Rothbucher Systems.



Accessories



Protective Caps RSPC10 and RSPC10M* Protective Caps RSPC20 and RSPC20M*

These protective caps, in two different sizes, protect prisms and reflective targets from fouling. For points that are hard to reach, on a tunnel roof, for example, we offer the magnetic version.

The metal cube RSPC50 can be screwed onto a prism pole with 5/8" thread (see illustration below). This enables the protective cap to be removed from and fitted over the prism at a height of 3-4 meters.

RSPC10/RSPC10M* for mini prism RSMP280
RSPC20/RSPC20M* for mini prism RSMP380

* magnetic

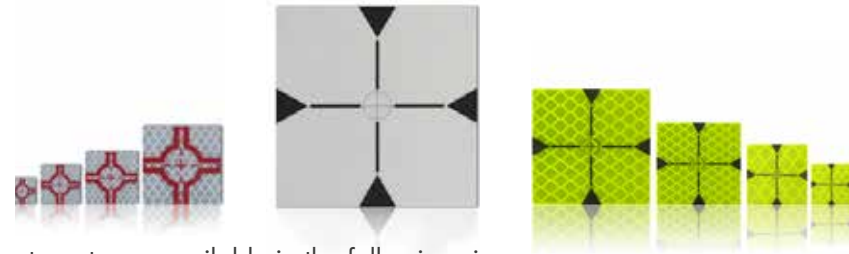


Metal Cube RSPC50 with 5/8" Internal Thread

With its 5/8" internal thread, the metal cube RSPC50 can be screwed onto a prism pole.

The magnetic protective caps (RSPC10M* and RSPC20M*) can thereby be easily fitted over and removed from the plastic case of the prisms, even from difficult positions, and refitted at any time.

Reflective Targets RSZ2 to RSZ6, RSZ22, RSZ2YE to RSZ6YE



Reflective targets are available in the following sizes:

RSZ2 / RSZ2YE	21 x 21 mm	→	Range approx. 50 m
RSZ3 / RSZ3YE	30 x 30 mm	→	Range approx. 80 m
RSZ4 / RSZ4YE	40 x 40 mm	→	Range approx. 100 m
RSZ6 / RSZ6YE	60 x 60 mm	→	Range approx. 120 m
RSZ22	220 x 220 mm	→	Range approx. 500 m

The ranges are average values and will be exceeded when using most current surveying instruments. A minimum distance of 10 m is required for some instruments.

Our reflective targets are supplied on a foil backing. Removal of the targets from the backing is possible even if wearing gloves!

In order to guarantee precise measurements with reflective targets, the sighting angle should be no more than 30°. **For all distance measurements using a total station, it is recommended** that only markers with reflective targets are used!

Especially for use with levels, theodolites and general construction lasers, we offer survey markers with crosshairs without reflective targets.

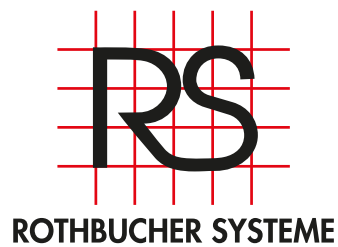
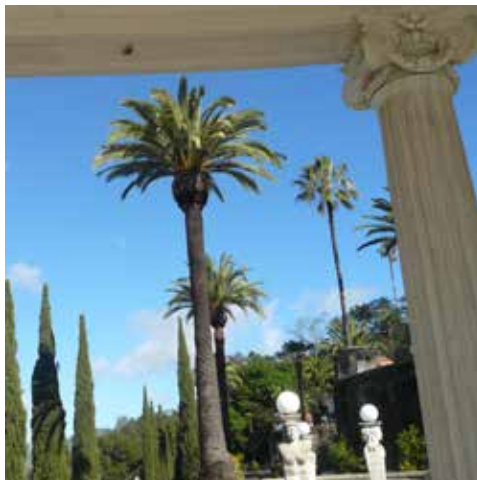


RSMK-FIX Mounting Adhesive

- High-performance mounting adhesive with instant initial adhesion
- Isocyanate- and silicone-free
- Permanently elastic and suitable for a wide range of uses
- Odourless
- RSMK-FIX is suitable for all products from Rothbucher Systems
- Can be used in any current pistol applicator
- A good applicator is recommended







**Products from Rothbucher Systems guarantee clear,
lasting and unmistakable measuring points.**

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