

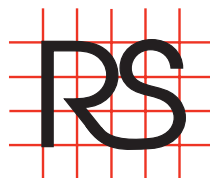
PinPoint Surveying System



Greater safety, greater precision!
Datum Marker and Smart Targets by
Rotbucher Systems

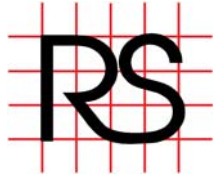
Ask for our price list!

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ROTHBUCHER SYSTEME

It all started in 1997 with the Smart Datums which have now proven themselves millions of times over. Site managers and foremen reported problems with the marking of levels.



Georg Rothbucher developed the Smart Datums in close cooperation with them.

Since then an overall concept for all survey points on a building has been developed in close cooperation with architects, site mana-

gers, foremen and surveyors.

The patented Smart Datum and Smart Target markers make the work for all concerned considerably easier. Sources of frequently occurring errors are avoided and all survey points are securely marked and documented permanently.

For surveys great store is placed on the precision of the equipment, but what use is the best kit if the points to be surveyed cannot be seen very clearly? There are still pencil marks, nails and other markings on wall which are not easily identified.

Is this up-to-date?

Using the RS Smart Datums and Smart Targets,



the precision of the measuring equipment is transferred to the wall. The survey points are documented permanently and 3-dimensional observation is possible with all Smart Targets. This has created a new standard in surveying.

All survey points provide unambiguous, permanent and distinctive documentation on all types of building site.

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RS30 and RS31 Smart Targets



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RS50 und RS51 Smart Targets



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RS80 Smart Angle Targets



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Plastic adapter RSAK80 with
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RSAMG80 hot galvanised metal adapter with DW15 thread
and Smart Angle Targets Page 11



RSAM80 hot galvanised metal adapter with Smart Angle Targets
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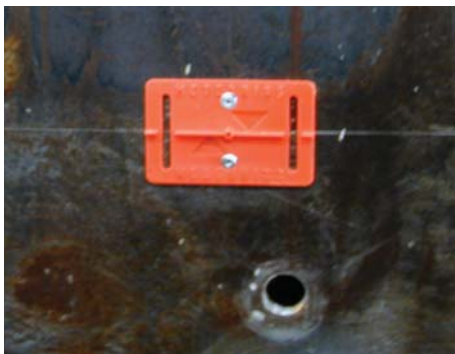
RS10 and RS11 Smart Datums - ideal for concrete construction and for measurement of pre-cast sections



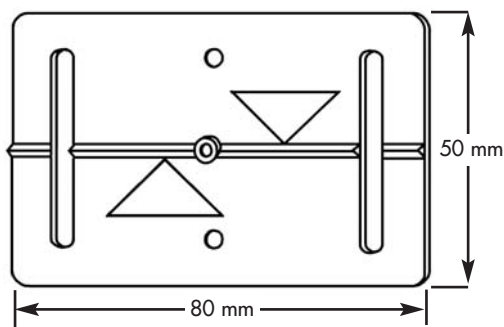
RS10r



RS10w in a door reveal



RS10r in shuttering



Pre-cast sections with negative imprint in the concrete

Smart Datums by Rothbucher Systeme are already standard on many building sites and are increasingly specified by architects.

RS10 and RS11 - self-adhesive - are used to securely mark the level on building sites without plastering work and in door and window reveals.

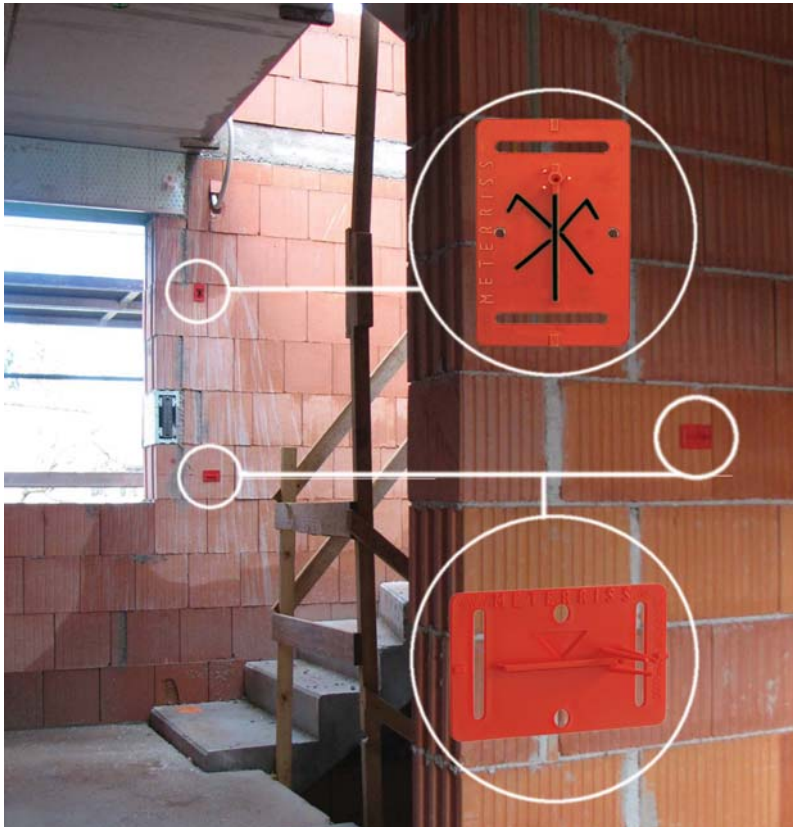
When the Smart Datum is attached to the shuttering, an indentation is made in the concrete. This type of use is sensible for partition walls and columns, in particular.

Pre-cast sections which bear a negative impression help surveyors or site foreman to place pre-cast sections quickly and precisely at the correct level. Mistakes are avoided and crane costs reduced. After the pre-cast sections have been placed, the indentation is re-measured and then used as the unique level during the remaining building phase.



Defining survey points in a new way

RS20 and RS21 Smart Datums for building sites with plastering and to securely mark axes



RS20r as level marker and to securely mark axes

The RS20 and RS21 - self-adhesive - Smart Datums are attached to unplastered walls and provide an unambiguous document for all tradesmen. The Smart Datums have a projection on which the straightedge can be placed so that dimensional differences are avoided when transferring levels.



The flexible "stubs" ensure that the level marker is secure until the plastering work is completed and it can be easily retrieved. Level and axes, too, remain securely marked beyond the plastering work. If you want to prevent any tampering, you can spray over

the corners with coloured paint.

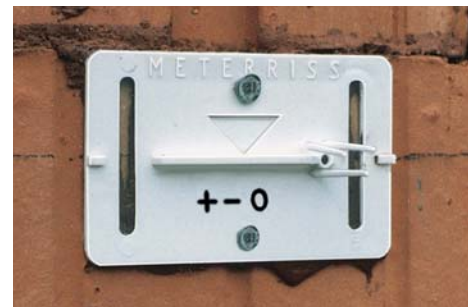
On completion of all work the stubs are snapped off - any finishing is minimal - and the Smart Datum remains below the plaster as proof.

We recommend gluing the Smart Datums and securing them at least once.

Simple – safe – extremely accurate



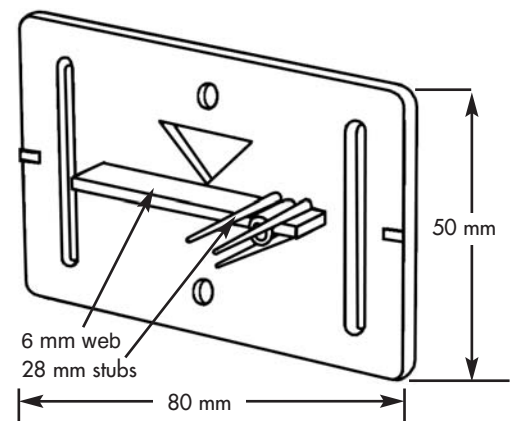
RS20r



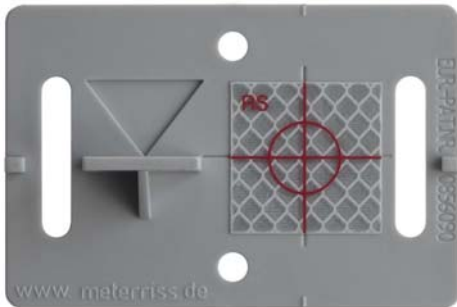
RS21w on brick



RS21r sprayed with coloured paint



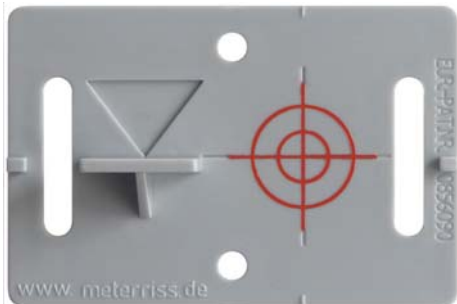
RS30 to RS41 Smart Targets - the combination target for surveyors and foremen



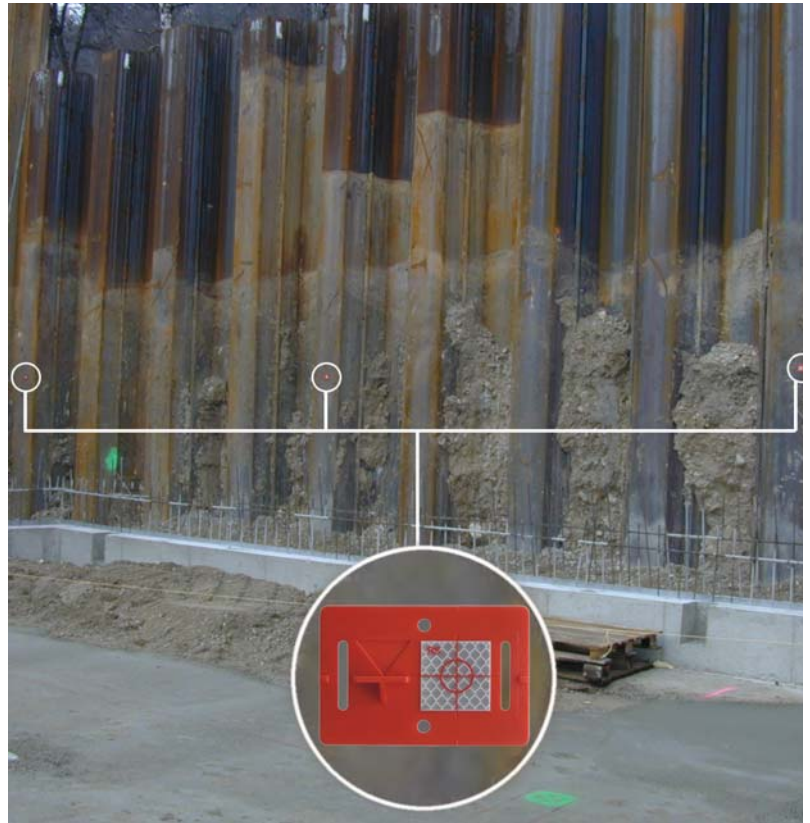
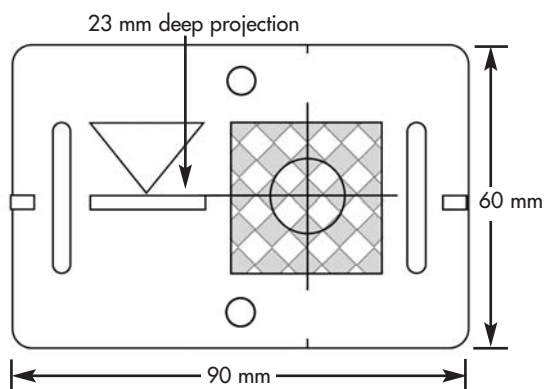
RS30g with 30 x 30 mm reflective target



RS30r with 30 x 30 mm reflective target



RS40r with white cross hairs



Observation of sheet piling with RS30r

The RS30 & RS40 combination targets enable documentation and permanent marking of levels and axes with one product.

The targets are permanently attached to difficult substrates with a 2-component adhesive or screw and dowel. A projection on which you can place straightedge or measuring staff ensures that levels are measured precisely.

Levels and axes are marked with number punch or waterproof marker pen so that the survey points are securely marked in an unambiguous manner. If you add a position number, sheet piling, asbestos cement boards, façades, neighbouring buildings in case of vacant lots, supports and other objects can be monitored for subsidence by the staff. If you work with a total station or a tacheometer, you can monitor your buildings for subsidence and lateral movement



The definitive survey aid

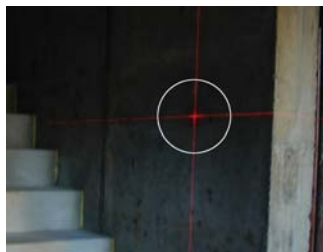
RS50 to RS71 Smart Targets - the all-round targets for a variety of uses



Monitoring of a façade using RS60r

These targets have a variety of uses. Inside buildings, levels and axes are documented unambiguously. Transferring axes to the next floor level can be done easily and precisely in the staircase or an opening using laser or plumb line.

On the outside, they can be fixed simply and permanently to any point. They are used for positioning with a tacheometer or can be used as a batter board or to secure levels and axes.



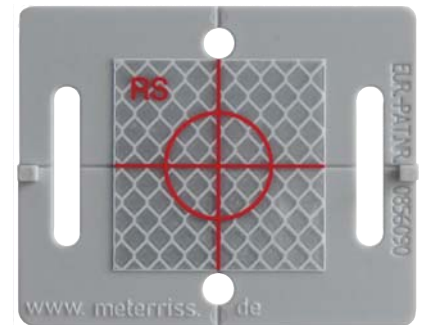
If the targets are attached to the façade, they can be used in various ways by surveyors and foremen and are used by façade builders to measure glass and natural stone façades.

They are also highly suitable for the 3-dimensional monitoring of facades, bridges, earth and rock movements and many other applications.

Measuring and scale accuracy



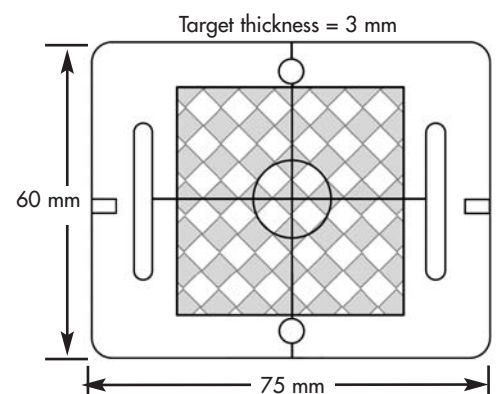
RS50r with 30 x 30 target



RS60g with 40 x 40 target



RS70r with white cross hairs



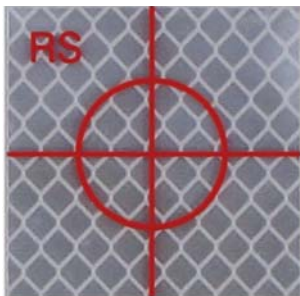
RSAKZ6 Smart Targets and RSZ2, RSZ3, RSZ4 and RSZ6 reflective targets



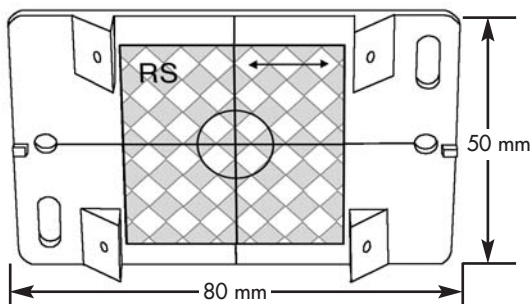
RSAKZ6r with 60 x 60 mm reflective target



RSAKZ6g with 60 x 60 mm reflective target



effective target



Monitoring of Loitalbridge mit RSAKZ6

For monitoring of bridges, ski lift supports and other objects: the RSAKZ6 Smart Targets are used whenever measurements have to be made over large distances.

The RSAKZ6 has a 60 x 60 mm reflective target and the range is about 120 m and in non-reflecting mode up to 250 m and more.



Monitoring of ski lift supports using RSAKZ6r and RSAM80g

Reflective targets are available in 20 x 20 mm, 30 x 30 mm, 40 x 40 mm and 60 x 60 mm sizes. Special sizes available on request.

Measurement in 3 dimensions

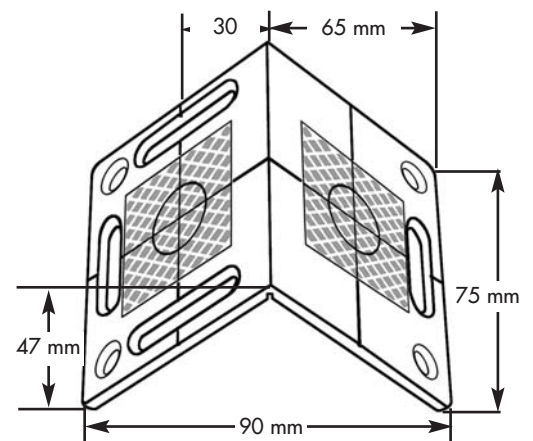
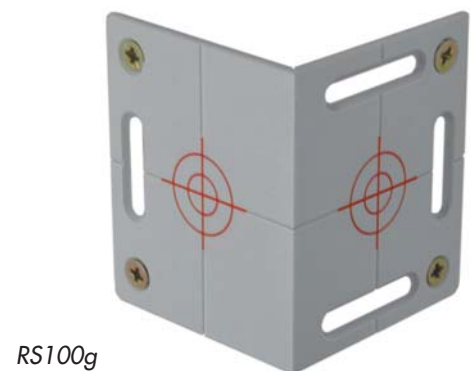
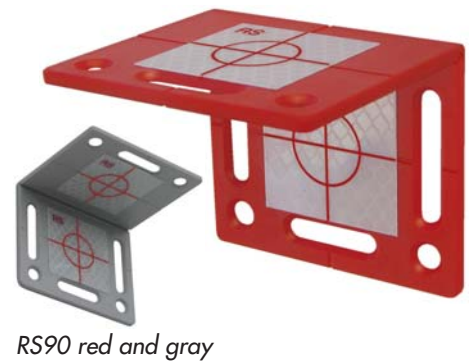
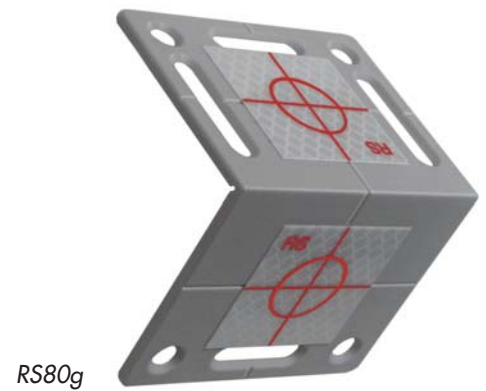
RS80 and RS90

Smart Angle Targets - the solution for difficult positions



Climbing formwork with RS90g

These targets are used whenever it is impossible to take a sight on the survey point due to a difficult location. The RS80 targets are fitted with one part forming a "roof", e.g. during tunnel construction with shotcrete they are simply pushed into the fresh concrete and securely attached once it has hardened. These targets are a very useful corner solution for the monitoring of façades and objects. If levels and axes have to be transferred from the outside to the inside or vice versa, the targets are, for example, attached to the window reveal. You are even able to take measurements around a corner. The RS90 Smart Targets are fixed with screw and dowel and make it possible to take a sight on the survey points from almost any position. An axis, for example, can be sighted from the front, from below and from the top. In case of climbing shuttering, the "roof" protects the targets from concrete slurry.



Survey points over the years

RSAK80 :

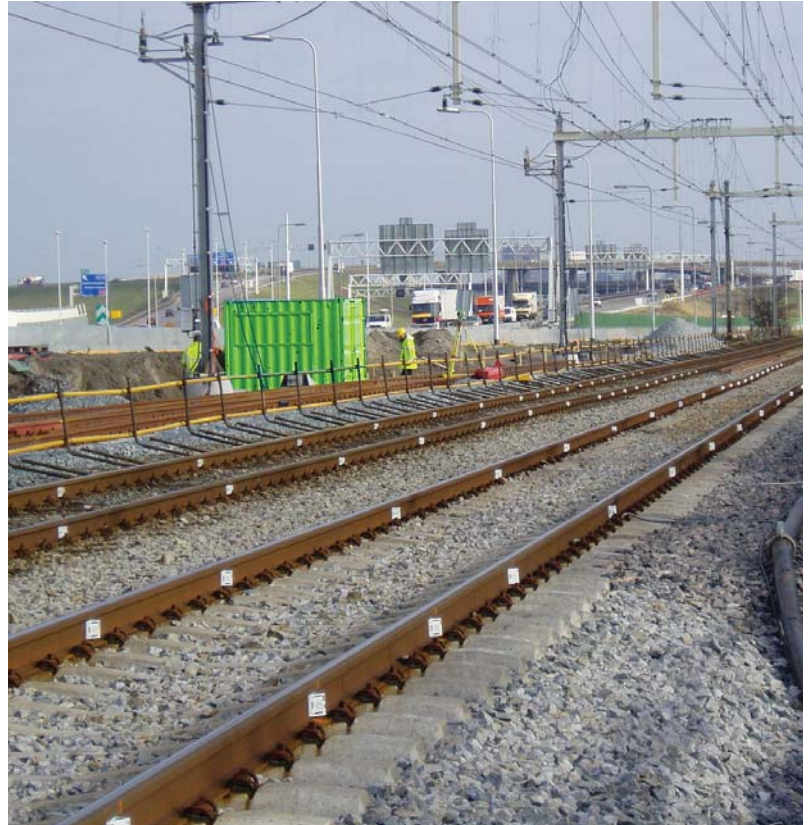
Plastic adapter with RS80 Smart Angle Targets



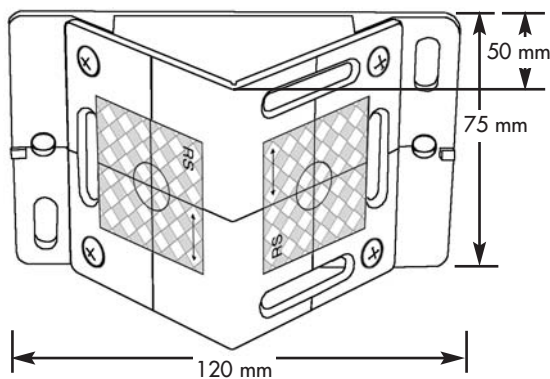
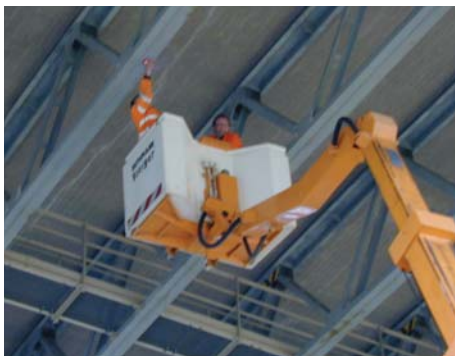
RSAK80r



RSAK80g



Monitoring of railway track using RSAK80g



If installation has been planned well using adapters with pre-installed Smart Targets, it is possible to use the survey point from almost any position. On track, for example, the surveyor need no longer enter danger zones, but can carry out measurements from a safe position.

Dangerous and expensive road closures are no longer necessary either.

Many measurements are made considerably simpler and 3-dimensional monitoring using XYZ coordinates are ensured.

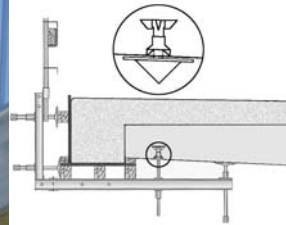
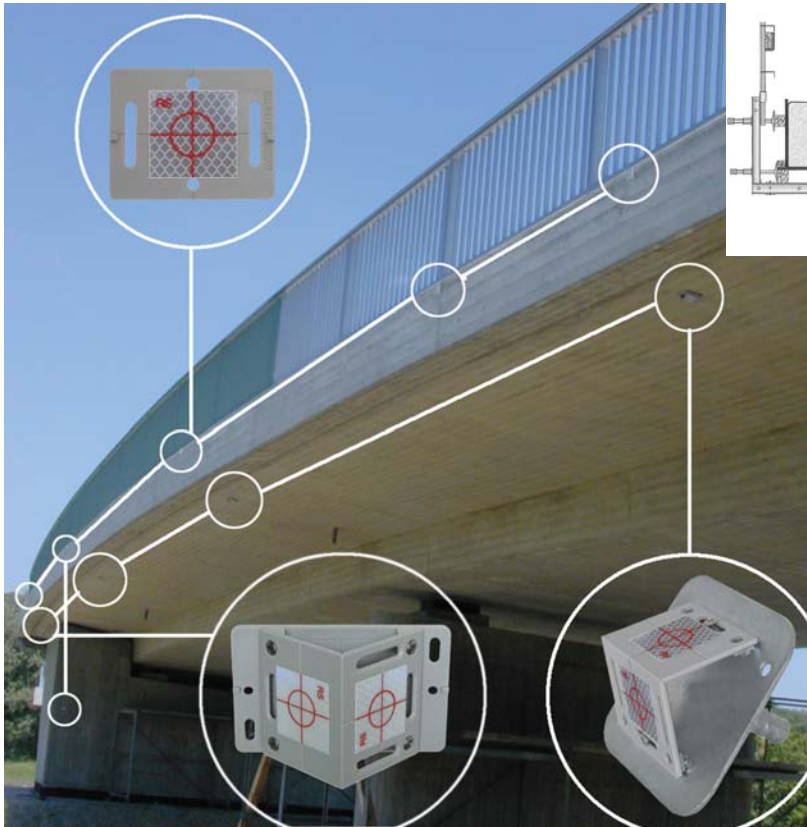


Construction of Ecluduct Belgium

The adapters with pre-mounted Smart Targets are also used for bridges, housings, dams, buildings, supports, high shelving and many other applications.

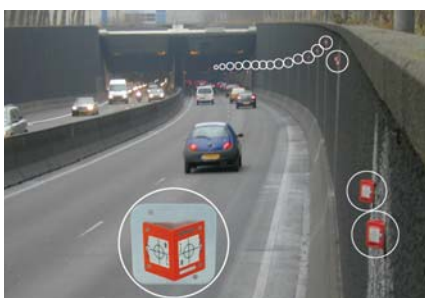
Precision and implementation

Monitoring of a new bridge with RSAK80g, RS60g and RSAMG 80g



Observation of a new bridge with RSAK80g, RS60g and RSAMG80g

The adapters with DW15 thread for easy and permanent attachment were specially developed for the construction of new bridges. Two-component adhesive is applied and they are screwed to the anchor sleeve which has been set into the concrete and aligned to the survey position. The anchor sleeves are set into the cantilever, frequently also the edge beam at a distance of about one metre and are ideally suited

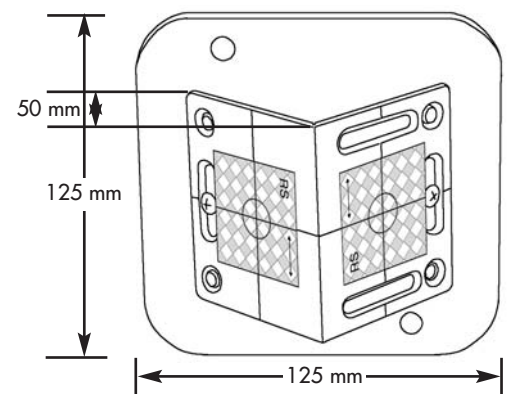


for survey purposes due to their position. Tedious drilling in armoured concrete and dangerous as well as expensive road closures are no longer necessary as it is not necessary to ascend the bridge for surveying.

The RSAM80 adapter without thread for welding in or dowelling is suitable for metal bridges, ski lift supports and other types of metal structures as well as for monitoring of avalanche break-up structures and earth and rock movements.

The original survey point can be reinstated quickly and economically by means of the clip system in case of damage.

The original survey point can be reinstated quickly and economically by means of the clip system in case of damage.



RS Datum Marker and Smart Targets are the ideal complement of all measurement devices

The products are subject to patent pending.



Ranges:

- Target reflectors 20 x 20 mm: range approx. 50 m
- Target reflectors 30 x 30 mm: range approx. 80 m
- Target reflectors 40 x 40 mm: range approx. 100 m
- Target reflectors 60 x 60 mm: range approx. 120 m

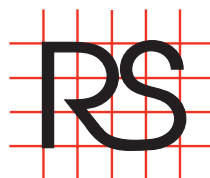
The ranges are average values and will be exceeded by the majority of current total stations, some of them need a minimum distance of 10 m.

Attention:

It is recommended that only Smart Targets with reflective targets are used for all distance measurements with tachymeters or total stations!

Smart Targets with cross-hairs, without reflective targets, are offered specially for use with auto levels, theodolites and construction lasers

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