

# proceq

## SILVER SCHMIDT CONCRETE TEST HAMMER



CONSTRUCTION

made in Switzerland  
[www.proceq.com](http://www.proceq.com)

# CONCRETE TEST HAMMER

## **The SilverSchmidt features superior performance, unmatched repeatability and intuitive operation all in a rugged and ergonomic unit.**

The SilverSchmidt has the following advantages over the traditional rebound hammer:

1. The rebound value is independent of the impact direction
2. The rebound value is not affected by internal friction
3. Tighter sealing against dirt and dust intrusion for longer life

The unique design and high quality construction of the SilverSchmidt brings a variety of additional benefits:

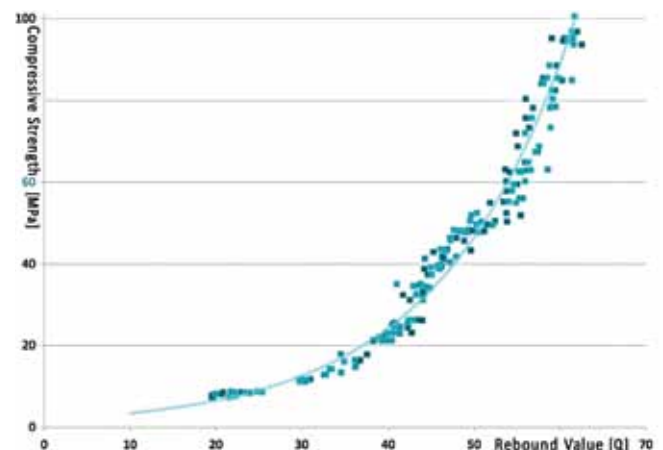
- The SilverSchmidt body lies very comfortably in the hand
- The display is highly readable under any conditions
- The new measurement principle and the design of the mechanics enable the SilverSchmidt to outperform its predecessors
- A large number of measurement points can be easily collected by the instrument and automatically evaluated according to standardized statistical criteria
- It offers automatic conversion to the required measurement unit (MPa, N/mm<sup>2</sup>, kg/cm<sup>2</sup>, psi)

## **Improved Performance**

Two key factors contribute to the improved performance of the SilverSchmidt over its predecessors:

1. Velocity based detection of the rebound quotient
2. The lightweight hybrid design of the impact plunger is made from aerospace alloy, matched to the elastic properties of the concrete and equipped with a hardened steel cap

Independent validation testing by BAM (Federal Institute for Materials Research and Testing) Germany has shown the SilverSchmidt to have less dispersion than the classical hammer over the entire range. This is a result of the patented optical detection technology for the rebound value Q.



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## SilverSchmidt Models

**ST:** Standard model. Hammerlink software provided for performing firmware upgrades and selecting statistics presets only. Useful memory limited to the last 20 series.

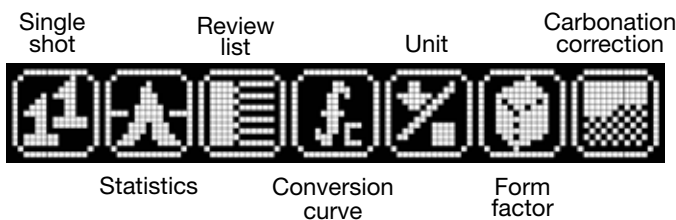
**PC:** Full Hammerlink software functionality. Extended memory usage. Download to PC. User defined custom curves.

**Type N:** Standard impact energy. Test object should have minimum thickness of 100 mm (3.9") and be firmly fixed in the structure.

**Type L:** Low impact energy. Suitable for brittle objects or structures less than 100 mm (3.9") thick.

## Intuitive User Interface

The language independent user interface is simple to use and provides all of the functionality necessary for a rapid assessment of the structure. Practically every command can be activated either directly or in two consecutive steps.



## Data Acquisition and Processing



Pre-programmed statistical methods in accordance with all of the major standards assures an error free, rapid determination of the rebound value.



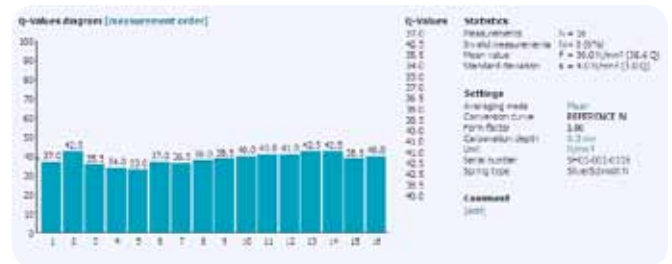
Reduced dispersion and direct conversion to compressive strength based on validated curves, regional curves or user defined curves bring improved accuracy to compressive strength estimates.



All data is automatically saved and the last 20 series may be reviewed in the data list.

## Hammerlink – Data Analysis made simple

The Windows based software Hammerlink unlocks the full capabilities of the SilverSchmidt PC version, making it an even more powerful instrument for structural assessment.



### Hammerlink features:

- Extended memory usage
- Rapid uniformity testing with the summary view
- User defined conversion curves (polynomial and exponential)
- User defined statistical methods
- Printouts
- Export to third party software

## Extending the range to fresh Concrete

The mushroom plunger in combination with the SilverSchmidt PC Type L hammer extends the lower measuring range down to approximately 5 MPa (725 psi).



This coupled with the SilverSchmidt's inherent angle in-dependency makes it the perfect tool for early strength applications such as determining when to remove formwork in tunnel linings.

## Applicable Standards

SilverSchmidt complies fully with EN 12504-2 and EN 13791.

The following standards have been applied in SilverSchmidt for the procedure to determine the rebound number: ASTM C 805, JGJ/T 23-2011.

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## Ordering Information

### SilverSchmidt Units

PART NO.	DESCRIPTION
	SilverSchmidt including battery charger with USB cable, data carrier with software, carrying strap, grinding stone, chalk, documentation and carrying bag
341 30 000	SilverSchmidt ST Type N
341 40 000	SilverSchmidt ST Type L
341 31 000	SilverSchmidt PC Type N
341 41 000	SilverSchmidt PC Type L

### Parts and Accessories

PART NO.	DESCRIPTION
341 10 400	SilverSchmidt anvil
342 10 400	Low range anvil
341 10 315	Plunger SilverSchmidt ST/PC complete
341 90 002	Mushroom plunger*
341 89 000	SilverSchmidt Premium Calibration Certificate
341 89 001	SilverSchmidt Anvil Premium Calibration Certificate

\*only with SilverSchmidt PC Type L

## Technical Specifications

Impact energy Type N	2.207 Nm (1.63 ft lbf)
Impact energy Type L	0.735 Nm (0.54 ft lbf)
Concrete compressive strength range Types N/L	10 – 100 MPa (1450 – 14500 psi)
Concrete compressive strength range Type L plus mushroom plunger	5 – 30 MPa (725 – 4351 psi)
Dimensions of housing	55 x 55 x 255mm (2.16" x 2.16" x 10.04")
Weight	570 g (1.3 lb)
Max. impacts per series	99
Memory capacity (PC version only)	ca. 400 series of 10 impacts ca. 200 series of 20 impacts
Useful memory capacity ST version	Last 20 series may be reviewed in the data list
Display	17 x 71 pixel, graphic
Battery life	>5000 impacts between charges
Charger connection	USB type B (5V, 100 mA)
Operating temperature	0 to 50°C (32 to 122°F)
Storage temperature	-10 to 70°C (14 to 158°F)

## Service and Warranty Information

Proceq is committed to providing complete support for the SilverSchmidt testing instruments by means of our global service and support facilities. Furthermore, each instrument is backed by the standard Proceq warranty and extended warranty options.

Standard warranty:

- Electronic portion of the instrument: 24 months
- Mechanical portion of the instruments: 6 months

Subject to change without notice. All information contained in this documentation is presented in good faith and believed to be correct. Proceq SA makes no warranties and excludes all liability as to the completeness and/or accuracy of the information. For the use and application of any product manufactured and/or sold by Proceq SA explicit reference is made to the particular applicable operating instructions.

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