CLAVIS®

Der Schlüssel für Ihren Wertschutzraum

ESSA MEMBER

VdS •ISO 9001 •Service-Unternehmen für Wertbehältnisse

Strongrooms / Vaults in modular construction

Grade 1 / I to 13 / XIII KB EX according to EN 1143-1

Tested and certified by VdS

Planning and construction of modular vaults / room-in-room systems by CLAVIS - certified company according to DIN EN 1090

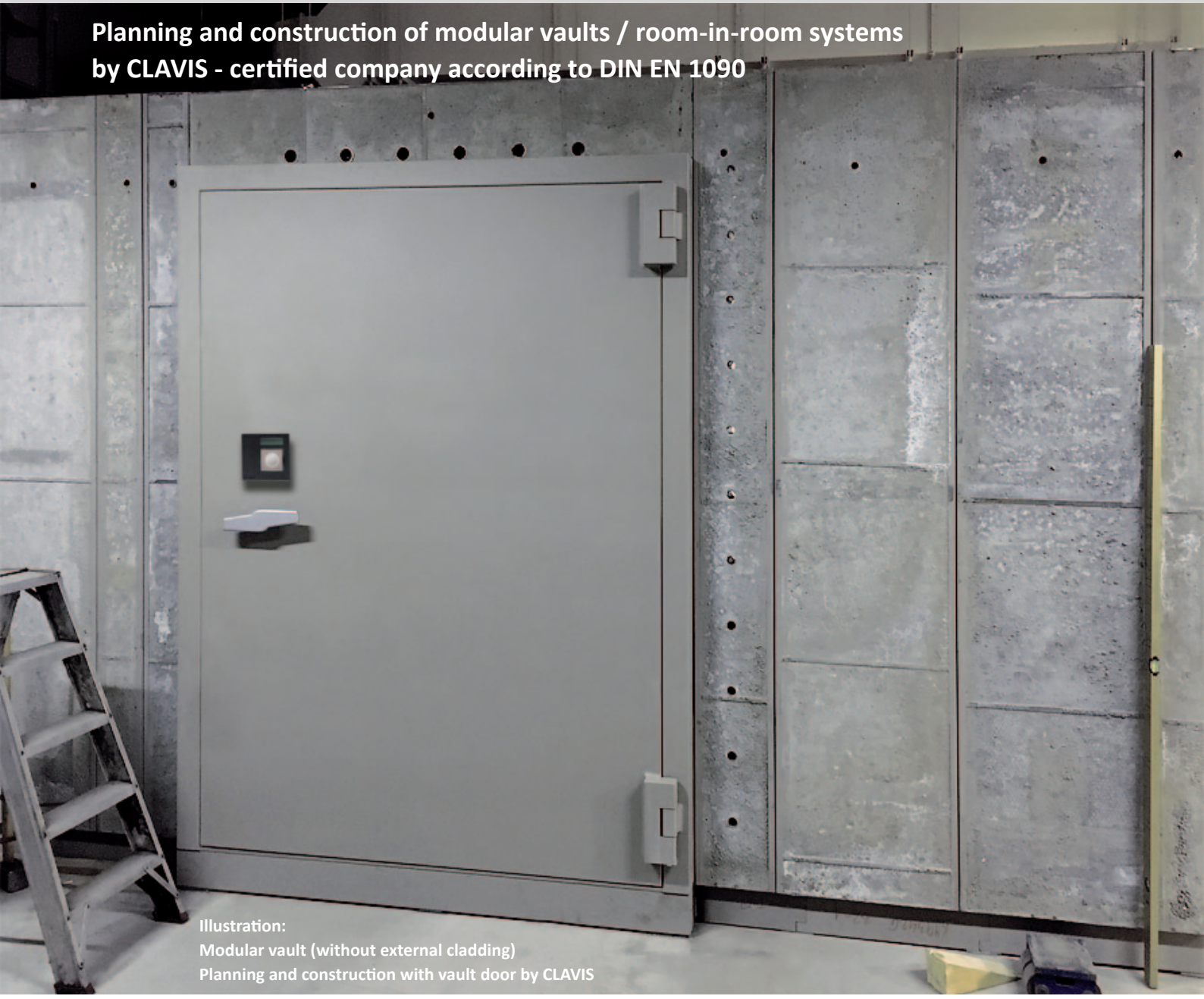

Illustration:
Modular vault (without external cladding)
Planning and construction with vault door by CLAVIS

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Properties

Walls for vaults in modular dry construction consist of prefabricated safety wall elements which are assembled on site to form a self-supporting construction (room-in-room system). Due to this self-supporting construction, the vaults cannot be subjected to additional traffic loads in the ceiling area.
The complex construction is connected by screwing (creating a connection that can be released again) or by welding (creating a permanent connection) at the installation site.
A certified and tested vault according to EN 1143-1 always consists of walls, floor and ceiling (6-walled). Modular vaults are available in resistance grades 1 to 13 CD EX according to EN 1143-1. The manufacture and assembly of vaults by CLAVIS are subject to DIN EN 1090.

Advantages of modular vault systems

- Modular vaults according to EN 1143-1 are compact and relatively light in construction - with the same degree of resistance compared to solid construction. They are assembled in dry construction.
- A smaller wall thickness for the safe room modules increases the usable capacity. Example: 400 mm wall thickness in solid construction is reduced - with the same resistance grade - to 70 mm wall thickness in the modular system.
- Modular vault systems can be retrofitted into existing areas. The structural analysis / ceiling load-bearing capacity must be clarified in advance by the customer.
- The room-in-room system retains its value. It can be dismantled and reassembled at a different location if you move or relocate.
- The elimination of drying times for the concrete results in a shorter construction time for the modular vault. Completion is possible within 3 to 4 weeks from delivery of the modules.

Security levels and dimensions for modular vaults

Security level acc. to EN 1143-1	**Resistance value** RU (Resistance Units)	**Wall strength** mm	**Weight** kg / m² panel space
1 / I (Lightweight)	50	42	47
1 / I	50	70	200
2 / II	80	70	200
3 / III	120	70	210
4 / IV	180	70	215
5 / V	270	70	220
6 / VI	400	70	225
7 / VII	600	100	315
8 / VIII	825	100 / 125	320 / 380
8 / VIII CD*	10.000	125	390
9 / IX	1.050	125 /165	390 / 500
9 / IX CD	10.000	125 / 165	405 / 510
10 / X	1.350	150 / 195	470 / 590
10 / X CD	10.000	150 / 195	480 / 600
11/ XI	2.000	200 / 250	630 / 740
11 / XI CD	10.000	200 / 250	640 / 750
12 / XII	3.000	250	770
12 / XII CD	10.000	250	780
13 / XIII	4.500	415	1200
13 / XIII CD	10.000	415	1220

*CD: protection against core drill

Construction of modular vaults by Clavis

Delivery of the module elements

Installation of the vault floor

Transport of the vault door

Construction of the wall elements (welding)

Installation of the ceiling panels

Setting the vault door

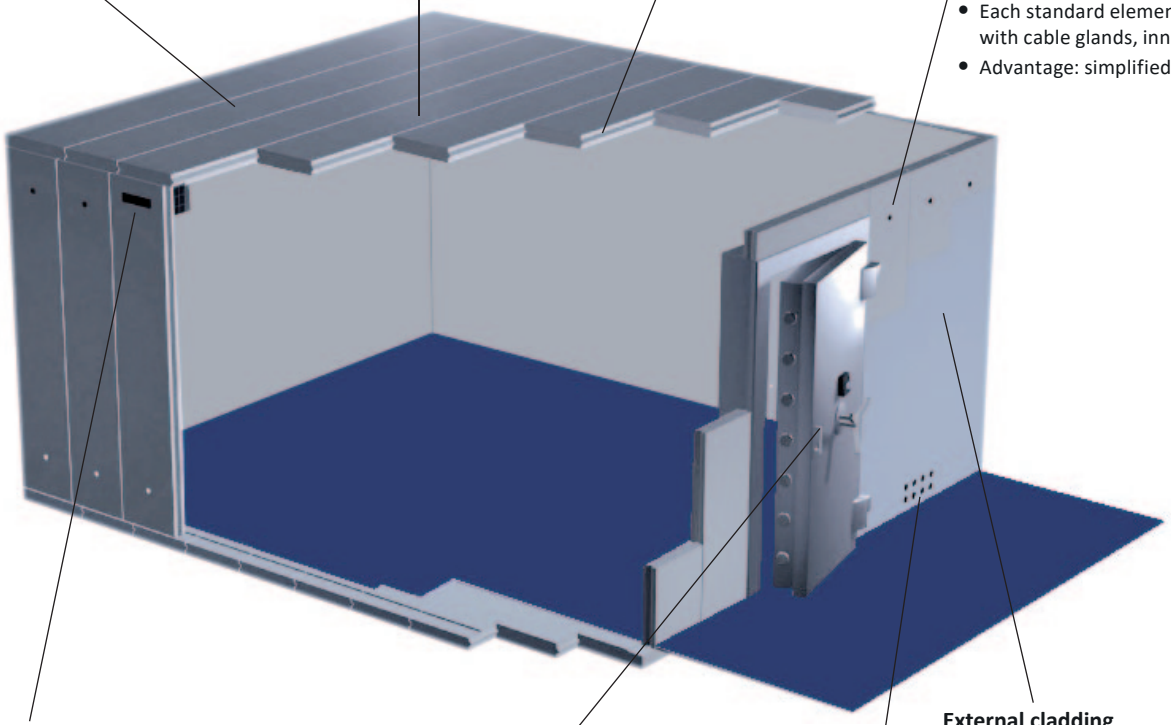
Construction of a modular vault

Element construction
- single-walled
- filling made of specially reinforced armour
- sheet steel housing
- substructure for easy installation of interior cladding

Interior cladding
- Element interiors are made of steel and provided with a base coat.
- Floor panelling can be glued according to choice.
- Wall claddings of your choice (plasterboard, wood or metal panels) are fixed to pre-prepared profiles (this is usually done on site).
- Ceiling claddings or suspended ceilings are fixed to pre-prepared profiles (this is usually done on site). (this is usually done on site).

Ceiling and floor elements
- Excess lengths are only possible with additional ceiling beams and columns (over 2900 mm).

Cable line optional
- Each standard element can be supplied with cable glands, inner diameter 40 mm
- Advantage: simplified cabling



Ventilation optional
- Ventilation is provided by the certified ventilation system integrated in the wall, which has a passage cross-section of 250 x 60 mm with an integrated ventilation box on the inside.
- A ventilation system can be connected to the outside.

Vault door
- With security options and lock as required
- Optional grille or glass door
- Standard equipment of the vault door for alarm system components

External cladding
- The existing walls do not have any external cladding. The surface surface consists of concrete, rough primed, not smoothed.
- Possible claddings are plasterboard, wood or metal panels (on site).

Ventilation
- For ventilation, a certified ventilation system is integrated into the wall at the bottom or top, consisting of 40 mm diameter holes at a distance of at least 200 mm.
- The number of ventilation holes is determined on the basis of the object size.

Vault doors

VdS and ECB-S certification

- Tested and certified by **VdS** in Cologne, resistance grade from 1 to 13 KB EX according to Euro standard EN 1143-1
- Tested and certified by **ECB-S**, resistance grade from 1 to 13 KB EX according to Euro standard EN 1143-1

Recommended amounts insured for vaults and vault doors in Germany

Resistance grade according to EN 1143-1 VdS / ECB-S certification	Recommended amounts insured in 1.000 € without / with VdS approved intrusion detection system	
	without	with
I	20	40
II	50	100
III	100	200
IV	150	300
V / V EX	250	500
VI / VI EX	375	750
VII / VII EX	500	1.000
VIII / VIII EX	750	1.500
IX / IX EX	1.000	3.000
IX CD / IX CD EX, X / X EX	1.000	4.000
X CD / X CD EX, XI / XI EX	1.000	5.000
XI CD / XI CD EX, XII / XII EX	1.000	7.500
XII CD / XII CD EX, XIII / XIII EX	1.000	10.000
XIII CD / XIII CD EX	1.000	> 10.000

CLAVIS offers high-quality, certified vault doors in security grades 1 / I to 13 / XIII KB / EX according to EN 1143-1. We supply vault doors in special dimensions, in all conceivable designs and with all high-security lock systems available on the market in grade B, C and D according to EN 1300. The surface coating can be selected from the RAL colour palette. The door hinges are available in DIN left or DIN right. The components for alarm systems can be fitted by CLAVIS or provided by the installer.

Vault doors offer protection against mechanical or thermal attack tools and against fire. A vault must be equipped with a vault door of the same security level or higher.

Day doors for vaults and rental lockers

Day-grille door

The day-grille door is always installed where it makes sense and is necessary for organisational reasons not to allow unhindered access to the vault for every person when the vault door is open, as additional protection against robberies and burglaries and for convenient handling in day-to-day business. The grille doors are always manufactured to match the CLAVIS vault door.

A profile cylinder lock is the standard lock for grille doors. Optionally, there is the possibility of electrical door opening by means of an electronic door opener contact.

Illustration: special version of a grille door by CLAVIS

Glass security door

Day doors in glass design are suitable for customer rental locker systems of banks and financial institutions.

They are equipped with an electronic door opening for activation by access control systems. Optionally available: a mechanical door closer that closes the door after manual opening.

Illustration: Day door in glass version

Safe locks

In terms of security level, the vault doors are equipped with a key lock or a mechanical combination lock as standard. The locks vary with regard to the security level of the vault door in the number of locking points as well as the appropriate security classes 1 / A to 4 / D according to EN 1300 for certified safe locks.

- Mechanical double-bit key locks are available in classes A, B, C according to EN 1300.
- Mechanical combination locks are available in classes A, B, C, D according to EN 1300.
- Electronic high security safe locks are available in classes A, B, C, D according to EN 1300.

Resistance grade of strongroom doors and required strongroom locks

Resistance grade vault door (acc. to EN 1143-1)	Minimum lock class requirement for vault doors (VdS certified acc. to EN 1300)
1, 2	1 lock grade 1 / A
3	1 lock grade 2 / B
4, 5	2 locks grade 2 / B
6, 7, 8, 8 CD, 9, 9 CD, 10, 10 CD	2 locks grade 3 / C
11, 11 CD, 12, 12 CD	3 locks grade 3 / C or 2 locks grade 4 / D
13, 13 CD	2 locks grade 4 / D

Lock systems for vault doors (selection)

Wittkopp GATOR - modular lock system

WITTKOPP

- modular solutions from Basic to Premium
- flexible combination options of high-security lock, input unit and software (illustration: Gator DF input unit)
- special solutions for various security requirements
- up to 15 locks in one bus-system
- redundancy: the locks have all security related components doubled
- simple and convenient handling
- same operation of all locks and input units

Certifications
grades 2, 3, 4 / B, C, D according to EN 1300, VdS certified

dormakaba PAXOS advance IP

dormakaba

Paxos advance IP is the new fully redundant motorised lock with power supply from battery, electricity or emergency power. With further system components such as the optional I/O box, which offers additional inputs and outputs, the system can be expanded as desired and optimally adapted to the customer‘s needs. This enables smooth integration into existing alarm systems, access systems etc. The serial USB interface simplifies and speeds up the installation and parameterisation of the system. This saves valuable installation time and reduces maintenance to a minimum. The two proven input variants, keyboard and rotary knob, have been taken over from Paxos compact. The electronics have been completely redesigned, allowing the use of several input units in parallel.

Certifications
grades 2, 3, 4 / B, C, D according to EN 1300, VdS certified

dormakaba Combi B 90

dormakaba

- Electronic combination lock with block bolt and mechanical redundancy
- 90 users / 1 master / 1 courier
- Opening delay, audit function up to 970 events, optionally with time and date output
- Code functions: Four-eye code, code blocking function
- In addition to a completely revised and more user-friendly fitting design, the lock offers a considerably enlarged range of functions. The integrated mechanical redundancy ensures the highest possible operational security: by simply removing the knob, the concealed keyhole is exposed and the lock is opened with the double-bit key.
- Furthermore, software is available with which the lock‘s event memory can be read out and all programming procedures can be carried out conveniently.

Certification
grade 2 / B according to EN 1300, VdS certified

Contactless lock system for vault doors from grade 1 to 5

INSYS-locks - EloStar®flexID

INSYS locks

Flexible locking system for openings with RFID card or RFID tag

- High-quality motor lock and compact RFID reader unit
- Contactless access via RFID card, wristband or key fob for fast, easy opening
- Optional: biometric RFID card with integrated fingerprint recognition
- Operation without keyboard or PC software (creation of users or cards)
- Configuration via the supplied RFID master card
- Up to 99 additional cards / tags possible
- Complete logging of all processes
- Tamper lock, automatic closing, emergency power supply
- Time delay, 4-eyes principle, external release / blocking
- Alternatively configurable via PC software

Certification
grade 2 / B according to EN 1300, VdS certified