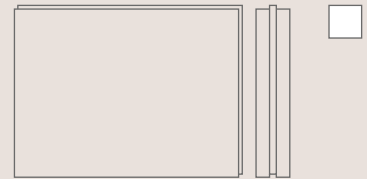


MultiGips

Technical data sheet

Solid gypsum blocks M100

EN 12859



MAIN FEATURES

Building material Factory-made building element that is produced basically from calcium sulphate with smooth surfaces for the construction of non-load bearing partitions, independent wall linings and fire protection of columns, shafts and the like.

Properties Mineral
High dimensional stability
Tongue and groove profile for positively locking partitions
Basically dry processing with gypsum-based adhesive
Smooth, flat visible surfaces for rapid final treatment; no plaster required
EPD Environmental Product Declaration

Performance as building element Non-load bearing partitions somewhat similar to drywall construction but without the need for substructure framing
Less thickness required to satisfy stability, which could result in more usable area
Low weight per unit area for optimum ceiling dimensions
Reduction of structure-borne noise due to relatively elastic connection to adjacent building components (decoupling)
Fire resistance class EI 120, E 120
Good thermal insulation for greater thermal comfort
High resistance to mechanical stresses, and hence less maintenance required

Special features Certified low level of hazardous substances for improved interior air quality helps eliminate health risks.
Fulfils the requirements for use in interiors according to the Federal Environmental Agency in the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety in the Federal Republic of Germany. Extremely low emissions.

EN multigips.com

EU ce.multigips.de

EPD ibu-epd.com

TECHNICAL FEATURES

Performance feature	Building material
European standard	EN 12859
Building element thickness	100
Length x height (mm)	666 x 500
Block requirement (blocks/m²)	3
Colour	Natural
Density class	Medium density (M)
Density [kg/m³]	approx. 850
Unit weight (kg)	approx. 30
Weight per unit area (kg/m²) of building element, incl. its components	approx. 87
Strength class	Type A
Bending strength (kN) Minimum average breaking load	4.0
Moisture content (% by weight) at time of delivery	≤ 8
pH level	7 – 9 (normal)
Water absorption class	H3
Water absorption	No requirement
Reaction to fire EN 13501-1, Euroclass	A1, no contribution to fire
Areal thermal resistance R	0.35
Thermal conductivity λ_{23-50} (W/mK)	0.28
Water vapour diffusion resistance (μ)	5 – 10
Storage	Dry on Euro pallets

BUILDING PHYSICS DATA

Performance feature	Component
Fire resistance class EN 13501-2	EI 120 ¹⁾
Weighted sound reduction index Rw (dB) EN ISO 717-1	40 ²⁾

1) Classification of a wall construction consisting of gypsum blocks without mounting parts, with mineral wool interlayer according to EN 13162 (melting point $\geq 1,000$ °C, thickness ≤ 13 mm, compressibility ≤ 3 mm) with maximum permissible wall height ≤ 3.00 m; with maximum permissible wall height ≤ 4.00 m as EI 90. For walls with fire protection requirements, wall heights according to DIN 4103-2 and EN 15318 must be considered as a priority.

2) With MultiGips AkustikPro 120-3/120-3 sk; the measuring result is obtained under laboratory conditions without structural longitudinal transmission

ORDER INFORMATION

Performance feature	Building material	
Material number	803	
Format (mm)	666 x 500 x 100	
Weight (kg/unit) (kg/pallet), approx.	30 pcs./pallet	720 kg/pallet
Packaging unit/pallet (unit) (package)	24 units	2 packages
Area (m²/pallet)	8.00	

ENVIRONMENTAL DATA

Performance feature	Building material, building element
Composition	Hardened gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$)
Emission of hazardous substances [Regulation (EC) No. 1272/2008 (materials)] (preparations 1999/45/EC)	Not liable to marking
Performance	
Emissions of volatile organic compounds (mg/m³ TVOC after 3 days)	0.022 ¹⁾
Emissions of very volatile organic compounds (mg/m³ VVOC)	0 ¹⁾
Carcinogenic substances (mg/m³ after 3 days)	0 ¹⁾
Natural radioactivity (mSv/a)	< 0.02 ²⁾
Persistence, bio-accumulation potential, toxicity	No PBT characteristics
Duration of use ³⁾ (y)	> 50

1) Fraunhofer Institut für Bauphysik (Fraunhofer Institute for Building Physics), 10.2010, certified gypsum blocks, thickness 100 mm, average density approx. 800 kg/m³

2) Evaluation according to Radiation Protection 112 of the European Commission, source: MultiGips Environmental Product Declaration for gypsum blocks

3) Table Duration of Use of Building Components for Life Cycle Analyses according to the Nachhaltiges Bauen (Sustainable Building) (BNB) evaluation system, source: Bundesinstitut für Bau-, Stadt- und Raumforschung (Federal Institute for Research on Building, Urban Affairs and Spatial Development)(BBSR)

DIMENSIONS ACCORDING TO DIN 4103-2 AND EN 15318

Max. permissible dimensions ¹⁾ of building elements made from gypsum blocks M100 according to DIN 4103-2 (2017-09)

Connection location/ characteristic	Installation section ²⁾	Wall height (m)		Wall length (m)
		Single-leaf		
2-sided connection: Connected at floor and ceiling, with variable wall length, may have large wall openings	1	≤ 7.00		Any
	2	≤ 5.50		Any
4-sided connection: Connected all around, may not have large wall openings	1	≤ 7.50		Any
	2	≤ 6.00		≤ 16.50
3-sided connection: Connected at floor and beside, may not have large wall openings	1	≤ 7.00		≤ 7.00
	2	≤ 4.50		≤ 4.50

1) In case of fire protection requirements, the wall height is limited to ≤ 3.00 m (classification EI 120, E 120); increase of permissible wall height to max. 4.00 m (classification EI 90, E 90).

2) Horizontal load (0,5 kN/m): Section 1 with low numbers of people, e.g. in apartments, hotels, offices et al., including corridors. Horizontal load (1,0 kN/m): Section 2 with large numbers of people, e.g. in large auditoriums, assembly halls, school rooms et al. Working loads according to DIN 4103-1.
Installation area 2: Areas with large numbers of people, e.g. large auditoriums, assembly halls, school rooms, exhibition halls and sales rooms

Max. permissible dimensions ¹⁾ single-leaf walls or wall sections with normal load levels for gypsum blocks with medium to high density without cavities according to EN 15318 (2008-01)

Gypsum blocks (Density class)		Partitions without wall openings			Partitions with wall openings			Partitions without connection to ceiling		
D ²⁾	M ³⁾	Area ⁴⁾ (m ²)	Height (m)	Length (m)	Area (m ²)	Height (m)	Length (m)	Area (m ²)	Height (m)	Length (m)
	60	32	4.00	8.00					1.50	1.50
60	70	55	5.00	11.00		2.75			2.50	2.50
70	80	77	5.50	14.00		3.50			3.50	3.50
80	100		5.50	16.50		5.00			4.00	4.00

1) Dimensions apply for gypsum blocks and hydrophobic gypsum blocks

2) High density (D) according to EN 12859: $1,100 \text{ kg/m}^3 \leq \rho \leq 1,500 \text{ kg/m}^3$

3) Medium density (M) according to EN 12859: $800 \text{ kg/m}^3 \leq \rho < 1,100 \text{ kg/m}^3$

4) The main selection criterion is the maximum wall area.

APPLICATION PRINCIPLES

Application Assemble gypsum blocks with gypsum-based adhesive for gypsum blocks EN 12860 in a staggered pattern. Wherever possible, the joints of subsequent blocks should not meet. For staggering of the joints, a minimum of 1/4 of the block length is recommended, similar to a masonry construction. In the joint area, or over the full surface, the partitions are smoothed with MultiGips adhesive for gypsum blocks or with the special MultiGips SG 90 Uni surface smoothing plaster. Joints and wall surfaces to which cladding is to be attached need not be smoothed.

Cut the gypsum blocks by handsaw or with a chainsaw. Sawdust must be removed from the cut edges. Cut-outs, e.g. for electrical installations, or small wall openings may not be chiselled out; they must be made with a power tool. Large openings, e.g. for doors, are created via placement of the blocks or are sawed out after the partition has been built. Metal installations such as doorframes or heating circuit distributors must be protected against corrosion. Fill doorframes with the special MultiGips FG 70 Füll- und Zargengips (filling plaster). Mortar which contains cement may not be used.

During construction, the site air temperature and the temperature of the building elements may not fall below +5 °C. Work must be suspended if night frost is expected. If possible, the top floor ceiling should be sealed in order to greatly reduce the effects of moisture during the construction phase. Construction can be carried out regardless of the effects of weather through the use of hydrophobic gypsum blocks at the base of the partition and/or MultiGips Hydro-Sockel (damp course) to prevent rising damp. If screed is to be subsequently installed, the covering of the insulation layer must be properly continued up the walls. In particular with poured asphalt screed, adequate cross-ventilation must be ensured.

Joints Gypsum blocks are connected to adjacent building components by the use of elastic interlayer. In particular for the construction of ceiling connections, care must be taken that the elastic interlayer form a sealed joint without cavities. The edges of the top-blocks can be either horizontal or bevelled. Bevelled edges increase the bonding area for the filling plaster. Dust must be removed from the cut edges and the edges must be moistened before filling the ceiling joint. The ceiling joint must be completely filled in accord with the intended sound insulation, fire protection and well as structural engineering requirements.

Sound insulation In case of sound insulation requirements the connections of the partitions have to be designed with elastic interlayer. If there are no sound insulation requirements and negligible bearing forces, the connections may be rigid (without elastic interlayer).

NOTE: For partitions with certified sound insulation characteristics, the joints must be made with elastic interlayer as stated in the table "Building Physics Data".

Fire protection If the walls are to meet fire protection requirements, the joints must be made according to the national regulations. For example, elastic joints may be made if insulating material according to EN 13162 is incorporated in the form of rock wool strips.

NOTE: An assessment report by Exova Warringtonfire is available which presents a considered opinion regarding the expected fire resistance performance of a non-load bearing partition wall assembly as previously tested to German DIN 4102-2 at iBMB MPA Braunschweig. It can be concluded that the proposed partition wall assembly should be capable of providing 120 or 240 minutes integrity and insulation performance (dependent upon thickness).

SAFETY AND DISPOSAL

- Possible risks** The material is categorised as non-hazardous according to Regulation (EC) No. 1272/2008
- Disposal** Recommendation **Disposal according to official regulations.**
European List of Waste 17 08 02 Gypsum-based construction materials other than those mentioned in 17 08 01. Disposal as landfill, landfill category 1 and 2 according the German ordinance on the list of waste.
Packaging Bags or other packaging material must be optimally emptied and can be recycled after appropriate cleaning.
- Transport** Non-hazardous within the sense of international transport regulations.
- Safety data sheet** The information in the current safety data sheet at multigips.com applies.

CALCULATION AND DELIVERY INFORMATION

On the basis of practical experience. Deviations due to changes to general conditions such as wall dimensions, room layout, type of construction, transport routes, etc. must be taken into account.

System components	Unit	Material requirement	Delivery units	
			Form of packaging	Packaging unit
Gypsum blocks MultiGips M100	m ² /m ²	1	4.0 m ² /package (= 12 pcs.)	1 pallet
			8.0 m ² /pallet (= 24 pcs.)	(2 packages/pallet)
Elastic interlayer AkustikPro 120-3/120-3 sk AkustikBit 1000	m/m ²	1.3	25 m roll	4x 25 m rolls
			1 m strips	50 m/package
Gypsum-based adhesive for gypsum blocks Adhesive ClassicWeiss 90 Adhesive SuperWeiss 120/SuperWeiss 200 Adhesive Hydro 90	kg/m ²	approx. 1.0 – 1.5	25 kg bag	40 pcs./pallet
Gypsum filler (filling ceiling joints, electrical slots) FG 70 Füll- und Zargengips	kg/m ²	approx. 2 – 3	25 kg bag	40 pcs./pallet
Gypsum filler (backfilling doorframes) FG 70 Füll- und Zargengips	kg/doorframe	approx. 17	25 kg bag	40 pcs./pallet
Gypsum smoother (smoothing partition surface) SG 90 Uni	kg/mm/m ²	approx. 0.8	25 kg bag	42 pcs./pallet

LITERATURE

EN 12859 (2011-05) Gypsum blocks – Definitions, requirements and test methods

EN 12860 (2002-07) Gypsum based adhesives for gypsum blocks – Definitions, requirements and test methods

DIN 4103-2 (2017-09) Internal non-load bearing partitions – Part 2: Partitions made of gypsum blocks

EN 15318 (2008-01) Design and application of gypsum blocks

NOTE: In Germany gypsum blocks according to EN 12859 are used for non-load bearing partitions on the basis of German standard DIN 4103-2. The European standard EN 15318 for design and application of gypsum blocks is not applicable in Germany as it contradicts national building authority requirements.

Technical Data Sheet for construction product based on harmonised standard. No guarantee of being exhaustive or generally valid; legal claims against VG-ORTH GmbH & Co. KG cannot be based thereon. Only valid in conjunction with the recognized rules of construction technology, as published in the regulations of the professional associations and their professional bodies, as well as in conjunction with the technical documentation of VG-ORTH GmbH & Co. KG. Does not apply to other specified construction products/types in conjunction with their installation. Provides technical information for professional users to improve their understanding and ensure that the construction product is used and applied as intended. Does not substitute compliance with the established rules of construction technology and professional use and design under practical conditions by professional users. Warranted performance by the manufacturer for the construction product at time of market introduction. No commitment to a legally binding guarantee of certain properties or suitability for a particular application. No guarantee concerning performance characteristics of product as used, which depend on proper use. The relevant technical values for the construction product were calculated in accordance with the testing standard. To achieve the physical, structural and construction properties of MultiGips gypsum blocks, only MultiGips system components or products recommended by VG-ORTH GmbH & Co. KG may be used.

Note on English translation This is a translation of the technical data sheet valid in Germany. All stated details and properties are in compliance with the regulations of the EU and German standards and German building regulations. They are only applicable for the specified products, system components, application rules and construction details in connection with the specifications of the respective certificates and approvals. VG-ORTH GmbH & Co. KG denies any liability for applications outside of EU and Germany as this requires changes according to the respective national standards and building regulations.

VG-ORTH GmbH & Co. KG

Holeburgweg 24 | 37627 Stadtoldendorf

Telephone +49 5532 505-0

Fax +49 5532 505-560

info@multigips.com

www.multigips.com

