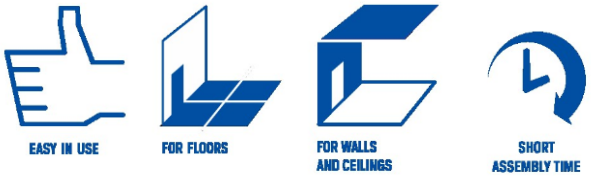
ATLAS M-system 3G

anchors for fastening boards to walls, ceilings, attics and floors

- fastening system for plasterboard and OSB
- smooth adjustment of the distance from 1 cm and the angle of inclination of the cladding panels
- allows easy levelling of curves and unevenness of surfaces
- for installation of wide-span, multi-level flat ceilings
- for the installation of raised floors on screeds, joists and floor beams
- recommended for the construction of shafts, attics, etc.
- makes it possible to install thermal, acoustic and vapour insulation at the same time.



Properties

Easy to install - point fixings allow the work (installation of disc anchors and cladding panels) to be carried out by one person.

Very fast work progress - the fixing of the full-size plate is limited to two steps: the drilling of the dozen or so holes in which the anchors must be fitted and the screwing of the plate to the plates using steel screws.

Infinitely variable adjustment of the distance between the panel and the substrate and of the angle of inclination of the cladding panels (±27°) - the distance between the panels and the substrate can be freely adjusted, irrespective of the geometry of the walls or plaster, within a range of 14-200 mm and, with the use of extension elements, even up to more than 500 mm for ceilings. Allows for angled cladding (max. ±27°).

The substrate (both mineral and wooden) for fixing ATLAS M-system 3G should be stable and load-bearing. It does not require any preparatory work: levelling, chipping cracked plaster, priming, etc. The system allows precise installation of panels on very uneven or cracked plasters. - The system enables precise installation of panels on very uneven or cracked plaster surfaces, in places with wall faults, etc.

The load carrying capacity of the stem of one 3GL M8/F6.5 fastener with a sleeve subjected to axial pulling from a concrete substrate of class C20/25 at the length of effective anchorage of 32 mm is not less than 1 kN (approx. 100 kg)

The load capacity of the connection of the plate with the 3GL M8/F6.5 fastener and the 12.5 mm thick GK plate under axial pull-off load of the plate from the stud is not less than 0.5 kN (approx. 50 kg)

Possibility of correcting the geometry of walls in the case of occurrence of concave or convex corners with an angle other than 90° - connectors can be used as a supplementary element when adhering panels to substrates with very large irregularities (>20 mm). They can then be embedded locally in the areas of the greatest irregularities, without the need for so-called underlining.

The possibility of installing electrical, water and sewerage systems and ventilation ducts under the surface of the panel cladding - in the case of existing piping or wiring - makes it possible to install the panels quickly while maintaining the required stability of the fixing.

Possibility to combine ATLAS M-system 3G with:
- traditional technologies, such as gypsum plaster ceilings,
- elements of ceilings of two or more levels, installed on the basis of 120 PP, 120 ZN or 120 N anchors.
- panels mounted on racking systems.

Stress compensation - thanks to point fastening of individual panels. The boards form a rigid disc after point-fixing, which eliminates the occurrence of further stresses between them and prevents cracks from forming at the joints. The disc is decoupled from the adjacent wall and ceiling claddings and is free to deform.

Quick installation of plasterboard cladding elements - lowered ceilings on part of their surface, cladding elements on the walls of rooms, etc. They can be quickly installed in selected areas of walls and ceilings adjacent to previously finished plaster surfaces, complementing the interior finish.

Quick installation of flooring on existing floors without the need for demolition work, avoiding wet work stages and process interruptions. No additional load on the construction of the floors.

The distance between sheathing and sub-floor can be reduced to 1 cm - minimising the loss of volume.

Convenience and safety in transport and storage, limitation of vertical transport of materials - the small dimensions of the system components enable them to be transported by car, which is not possible with rack solutions. The elements do not block storage space in rooms and can be stored in a limited area outside or in the car.

Purpose

ATLAS M-System 3G plastic anchors are used for enclousures and casing on:
- walls,
- ceilings,
- attics,
- floors (with imposed loads of up to max. 4 kN/m^2).

The ATLAS M-system 3G disc anchors are designed for the fixing of indoor use:
- **wall and ceiling cladding made from gypsum plasterboard** - in accordance with EN 520-A1:2012, with a thickness of 12.5-25.0 mm (for internal applications only),
- **wall and floor fibre cement panels** - category A, B, C or D according to EN 12467:2013, with a thickness of 8.0-25.0 mm,
- **wall and ceiling wood-based panels** - according to EN 13986-A1:2015, with a thickness of 12.0-25.0 mm,
- **wood-based floorboards** - according to EN 13986-A1:2015, with a thickness of 22.0-25.0 mm,

The system is suitable for both new construction and renovation work - especially for the adaptation of attics and lofts for use or the conversion of existing rooms for other purposes.

It is the ideal solution for enclosing ventilation and installation ducts, suspended ceilings with varying levels, shaped sloping ceilings, etc.

Components of the lightweight construction system ATLAS M-system 3G

Kit component	Purpose		Quantity pieces per pack
	For walls, ceilings, attics	For floors	
montage plates (KT 3G 120 PP from polypropylene)	with an outside diameter of ø 120 mm, with or without perforation, with embedded zinc alloy ball element, with M8 female thread		21
fixing elements in a form of a pin with an M8 thread at one end with a resistance collar	- **3GL M8/ø6.5** with female thread ø 6.5 mm - **3 GL M8/M6*** (for ceilings only)with M6 thread, with or without counter-rotating spindle	**3 GL M8/ø8.5** with thread with an external diameter of ø 8.5 mm)	21
anchor element in the substrate: (polypropylene bushings)	- **L50 ø10 BX** with an outside diameter of ø 10 mm and length L=50 mm - **UNO-08*** with an external diameter of Ø8 mm and a length of 32 mm	- **UNO-10** with an external diameter of Ø 10 mm and lengths 36 mm - **L60 ø12 BX*** with an external diameter of ø 12 mm and lengths L=60 mm	21
steel screws protected against corrosion	measuring Ø 3.5 x 25 mm (oxidised)	with dimensions Ø 3.5 x 35 mm (galvanised)	84

* available on request

The ATLAS M-system 3G anchors are used without a two-rod spacer when embedded in a stable and load-bearing wooden substrate. The fastening of these anchors into the substrate is carried out by screwing the fastening element 3GL M8/ø 6.5 or 3GL M8/ø 8.5 into the timber substrate after pre-drilling to a minimum depth of 24 mm. 24 mm:
- for fastening element 3GL M8/ø6.5 with drill ø 5,
- for fastening element 3GL M8/ø8.5 with drill ø 7.

The wall, ceiling and floor boards should be fixed to the mounting plate with at least four steel screws included in the kit.

ATLAS M-system 3G anchors set into the substrate using L50 ø10 BX or L60 ø12 BX expansion sleeves, can be used in substrates made of:

- reinforced or unreinforced plain concrete of class C20/25 ÷ C50/60 according to EN 206:2014,
- autoclaved cellular concrete with an average compressive strength of no less than 6 N/mm^2 (compressive strength class no lower than 6) according to EN 771-4 +A1:2015,
- Solid ceramic bricks with a nominal wall strength of not less than 15 N/mm^2 (class not less than 15) according to EN 771-1+A1:2015,
- full silicate bricks with a nominal compressive strength of not less than 20 N/mm^2 (class not lower than 20) according to EN 771-2+A1:2015,
- ceramic hollow blocks (e.g. Porotherm), with a nominal compressive strength of not less than 15 N/mm^2 (grade not less than 15) according to EN 771-1+A1:2015, with a wall thickness of not less than 12 mm.

ATLAS M-system 3G anchors set into the substrate using UNO-08 or UNO-10 expansion sleeves can be used in substrates made of:

- reinforced or unreinforced plain concrete of a class not lower than C20/25 according to EN 206+A1:2016,
- autoclaved cellular concrete with an average compressive strength of no less than 6 N/mm^2 (compressive strength class no lower than 6) according to EN 771-4 +A1:2015,
- a subfloor of at least C16 class according to the standard PN-EN 13813:2003,
- solid ceramic bricks with a compressive strength of not less than 20 N/mm^2 (class not lower than 20) according to EN 771-1+A1:2015,
- full silicate bricks with a compressive strength of not less than 20 N/mm^2 (class not lower than 20) according to EN 771-2+A1:2015,
- Porous ceramic hollow blocks (Porotherm), with a compressive strength of not less than 15 N/mm^2 (grade not less than 15) according to EN 771-1+A1:2015,
- hollow ceramic bricks with a compressive strength of not less than 15 N/mm^2 (class not lower than 15) according to EN 771-1+A1:2015, with a wall thickness of not less than 30 mm,
- hollow silicate bricks with a compressive strength of not less than 20 N/mm^2 (class not lower than 20) according to EN 771-2+A1:2015, with a wall thickness of not less than 30 mm.

ATLAS M-system 3G anchors embedded in the substrate with fastening element 3GL M8/ø6.5 or 3GL M8/ø8.5 **may be used in substrates of construction timber** of strength class not lower than C24 according to EN 338:2016, with a thickness of not less than 25 mm.

ATLAS M-system 3G anchors can be used to fix floor slabs where the uniform distributed load on the floor is no more than 4.0 kN/m^2.

Table 4. Examples of room types and sizes of standard operating loads

OPERATIONAL LOAD according to PN-82/B-02003 standard	EXAMPLES OF ROOM TYPES
2 kN/m^2	• living rooms, • hotel and office rooms, • classrooms, • small cloakrooms, • loft ceilings,
3 kN/m^2	• auditoriums, halls, • dining rooms and cafés, • small auditoriums (theatre, concert- etc.), • corridors and lobbies, • stairs in residential buildings
4 kN/m^2	• crowded rooms in a static way (in museums, concert halls, waiting rooms), • cloakrooms next to large halls, • kitchens, • handy depots • staircases in public buildings

Technical requirements

The product has a National Technical Assessment from the Building Research Institute No. ITB-KOT-2020/1421, 2nd edition. National Declaration of Performance No. M-system 3G/2022.

Installation of anchors

Installation of the anchors should be in accordance with the manufacturer's instructions available at www.atlas.com.pl. It is available by means of the QR code on the first page of this document.

Consumption

The data are given in Tables 5, 6 and 7, located at the end of the Technical Data Sheet.

Important additional information

Each pack contains assembly instructions.

The WALLS CEILINGS AND ATTICS system is complemented by (a plasterboard lining single or double):

OPTION I - smooth + top finish paint/(wallpaper)

- filling of plasterboard joints - ATLAS STONER, ATLAS GTA, reinforcing tapes e.g. paper, fleece or american,
- filling of board surfaces - e.g. ATLAS GTA, ATLAS RAPID, GIPSAR GO!, PLUS GIPSAR, GIPSAR UNI,
- substrate priming - e.g. ATLAS UNI-GRUNT ULTRA, ATLAS UNI- GRUNT,
- painting - ATLAS optiFARBA and ATLAS proFARBA.

VARIANT II - wall cladding of ceramic tiles, porcelain stoneware and glass tiles - unit weight up to 25 kg/m2, no format size restrictions:

- substrate priming - e.g. ATLAS UNI-GRUNT ULTRA, ATLAS UNI-GRUNT,
- sticking tiles - adhesives of the ATLAS GEOFLEX or ATLAS PLUS line,
- flexible fillers - e.g. ATLAS ELASTIC SANITARY SILICONE.

Complementing the NA FLOOR system are:

VARIANT I - ceramic cladding on OSB board

- priming - ATLAS ULTRAGRUNT,
- installation of tiles - deformable (S1) and highly deformable (S2) adhesives, e.g. ATLAS ULTRA GEOFLEX, ATLAS PLUS, ATLAS PLUS S2 HYDRO,
- grouting - e.g. ATLAS CERAMIC GROUT, ATLAS ELASTIC GROUT,
- flexible fillers - e.g. ATLAS ELASTIC SANITARY SILICONE.

VARIANT II - ceramic cladding on an expansion mat

- ATLAS UNCOUPLING MAT T-100 laid directly on the OSB,
- installation of tiles - deformable (S1) and highly deformable (S2) adhesives, e.g. ATLAS ULTRA GEOFLEX, ATLAS PLUS, ATLAS PLUS S2 HYDRO,
- Grouting - e.g. ATLAS CERAMIC GROUT, ATLAS ELASTIC GROUT.

VARIANT III - ceramic cladding on OSB board with hydro-isolation (wet rooms)

- Waterproofing - ATLAS WODER E - wall (2x brush, consumption 1 kg/m^2), floor (1x brush + 1x trowel 4mm, consumption 2 kg/m^2),
- ATLAS HYDROBAND 3G sealing tapes for perimeter and tile joints),
- installation of tiles - deformable (S1) and highly deformable (S2) adhesives, e.g. ATLAS ULTRA GEOFLEX, ATLAS PLUS, ATLAS PLUS S2 HYDRO,
- Grouting - e.g. ATLAS CERAMIC GROUT, ATLAS ELASTIC GROUT,
- flexible fillers - e.g. ATLAS ELASTIC SANITARY SILICONE.

VARIANT IV - cement screed on OSB under other coverings or carpets

- separation layer - 0.5 PE film,
- screeds - ATLAS POSTAR 60 or ATLAS POSTAR 80,
- possible levelling of the surface for PVC panels or cladding ATLAS SMS 15, ATLAS SMS 30.

OPTION V: laying of wood-based panels or prefabricated boards

- direct mounting on OSB using foam or underlay boards

NOTE. For ceramic cladding use boards complying with PN-EN 300 standard, classified as wood-based boards type OSB/3 and OSB/4. Board thickness on the floor minimum 25 mm, on walls 18 mm.

The fire resistance of partitions and structural and non-structural elements of a building enclosed with gypsum plasterboards, fixed with ATLAS M-System 3G anchors in the fire resistance class range from EI 15 to EI 60 and from REI 15 to REI 60 should be assumed at least at the level declared for particular elements without such enclosures.
Gypsum board cladding fixed on M-system 3G anchors to structural (load-bearing walls, columns, beams, ceilings, etc.) and non-structural (partitions, installation duct casings, etc.) partitions are not able to lower, and may even raise, the fire resistance previously assumed for these types of elements.

Based on ITB classification studies (01141/21/R118NZP)
In terms of fire resistance, the system is recommended for:

- monolithic concrete and reinforced concrete walls not less than 120 mm thick in classes EI 15 to EI 60 and REI 15 to REI 60,
- walls made from autoclaved aerated concrete blocks with a thickness of:
  - min. 75 mm for classes EI 15 to EI 30,
  - min. 100 mm for EI 60 classes,
  - min. 150 mm for classes REI 15 to REI 60,
- walls of solid ceramic masonry units with a thickness of min. 120 mm in classes EI 15 to EI 60 and REI 15 to REI 60,
- walls of ceramic elements with vertical hollow core thickness:
  - min. 120 mm for classes EI 15 to EI 60,
  - min. 150 mm for classes REI 15 to REI 30,
  - min. 180 mm for REI class 60,
- walls of solid or hollow silicate masonry units of thickness:
  - min. 100 mm for classes EI 15 to EI 60,
  - min. 120 mm for classes REI 15 to REI 30,
  - min. 150 mm for REI class 60,
- solid reinforced concrete floors, hollow core slabs and prefabricated elements with a thickness of not less than 120 mm in classes REI 15 to REI 60,
- beam-and-block ceilings of a minimum thickness of 200 mm with a structural overburden of at least 40 mm, in which the load-bearing elements are reinforced concrete, pre-stressed concrete or steel beams and the filling is made of ceramic, beech or lightweight concrete blocks with a wall thickness of at least 10 mm for classes REI 15 and REI 60. 10 mm for classes REI 15 to REI 60.

Read the installation instructions and technical data sheet before starting work.

The information contained in the Technical Data Sheet represents basic information on the use of the product and does not exempt from the obligation to carry out the work in accordance with the rules of the trade or in compliance with health and safety regulations. With the issue of this Technical Data Sheet, all previous ones are no longer valid. Product related documents are available at www.atlas.com.pl.

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The tables show examples of the use of ATLAS M-system 3G disc anchors in different types of substrates and the corresponding (depending on the application) types of expansion sleeves, extension bars and fixing screws.

Table 1. Wall/ceiling/utility attic - distances between cladding and substrate

substrate	minimum screw-in depth of the anchor [mm].	distance between plate and substrate [mm]				
		for the anchor 3GL M8/Ø6.5				
		L50***	L100	L150	L200	L250*
wood and wood-based components walk (direct installation)	24	14-40	14-90	90-140	140-190	190-240
concrete or masonry units (assembly in L50 ø10 BX plastic sleeve)	64	14-32**	14-50	50-100	100-150	150-200

*** for use in ceilings only**

** using bush UNO-08 available on request (min. screw-in depth of anchor: 32 mm)

*** available on request

Table 2. Ceiling - cladding distances from the substrate, installation with extension piece

substrate	minimum screw-in depth of the anchor [mm].	distance between board and substrate [mm]					
		for clamping element + extension piece 3GL M8/M6					
		L100 +3GL PLUS M6 L200	L150 +3GL PLUS M6 L200	L150 +3GL PLUS M6 L300	L200 +3GL PLUS M6 L200	L200 +3GL PLUS M6 L300	L250 +3GL PLUS M6 L300
wood and wood-based components walk (direct installation)	24	240-290	290-340	390-440	340-390	440-490	490-540
concrete or masonry units (sleeve assembly plastic L50 ø10 BX)	64	200-250	250-300	350-400	300-350	400-450	450-500

Table 3. Floor - cladding distances from the substrate

substrate	minimum screw-in depth of the anchor [mm].	distance between plate and substrate [mm]		
		for anchor 3GL M8/Ø8.5		
		L60*	L110	L160
wood and wood-based components walk (direct installation)	24	14-50	50-100	100-150
concrete or masonry units (installation in UNO-10 plastic sleeve)	36	14-38	14-88	88-138

* available on request

Suggested spacing and USE of anchors due to application:

Table 5. Spacing and consumption of ATLAS M-system 3G - walls/ceilings

destination	spacing of anchors [cm] width x length	building possibilities from 1 pack
ceilings	40 x 40	approx. 3,5 m^2
	40 x 50	approx. 4 m^2
	40 x 60	approx. 5 m^2
walls	40 x 50	approx. 4 m^2
	60 x 40	approx. 5 m^2
	60 x 50	approx. 6 m^2

Table 6. Spacing and consumption of ATLAS M-system 3G - utility attics

destination	rafter spacing [cm]	axial spacing of anchors on the rafter [cm]	building possibilities from 1 pack
attics	70	50	approx.7 m^2
	80	45	approx. 7 m^2

Tables 5-6 show the anchor spacing for single plasterboard sheathing. Double plasterboard lining can only be used on walls, in which case the recommended anchor spacing is 60 cm x 60 cm.
The thickness of the plasterboard (9.5 mm and 12.5 mm) has no influence on the spacing of the anchors, but longer screws must be ordered to secure them to the plates.

Table 7. Spacing and consumption of ATLAS M-system 3G - floors

destination	maximum spacing of anchors [cm]	building possibilities from 1 pack
floors	62,5 x 62,5	approx. 7 m^2

When making raised floors using ATLAS M-System anchors, use wood-based boards of type OSB/3 or OSB/4 with a minimum thickness of 22 mm (structural boards capable of carrying imposed loads). The maximum spacing of the anchors is 62.5 x 62.5 cm.
If significant local loading of the future floor is planned with furniture fitted along the wall or other room furnishings (point loads), the plate spacing should be compacted by adding an additional row of anchors. Thus for the boards:

a) with dimensions of 2.5 x 1.25 m the recommended spacing is: 62.5 x 41.6 cm or 50 x 41.6 cm,
b) with dimensions of 2.5 x 0.675 m the recommended spacing is: 62.5 x 33.8 cm or 50 x 33.8 cm.