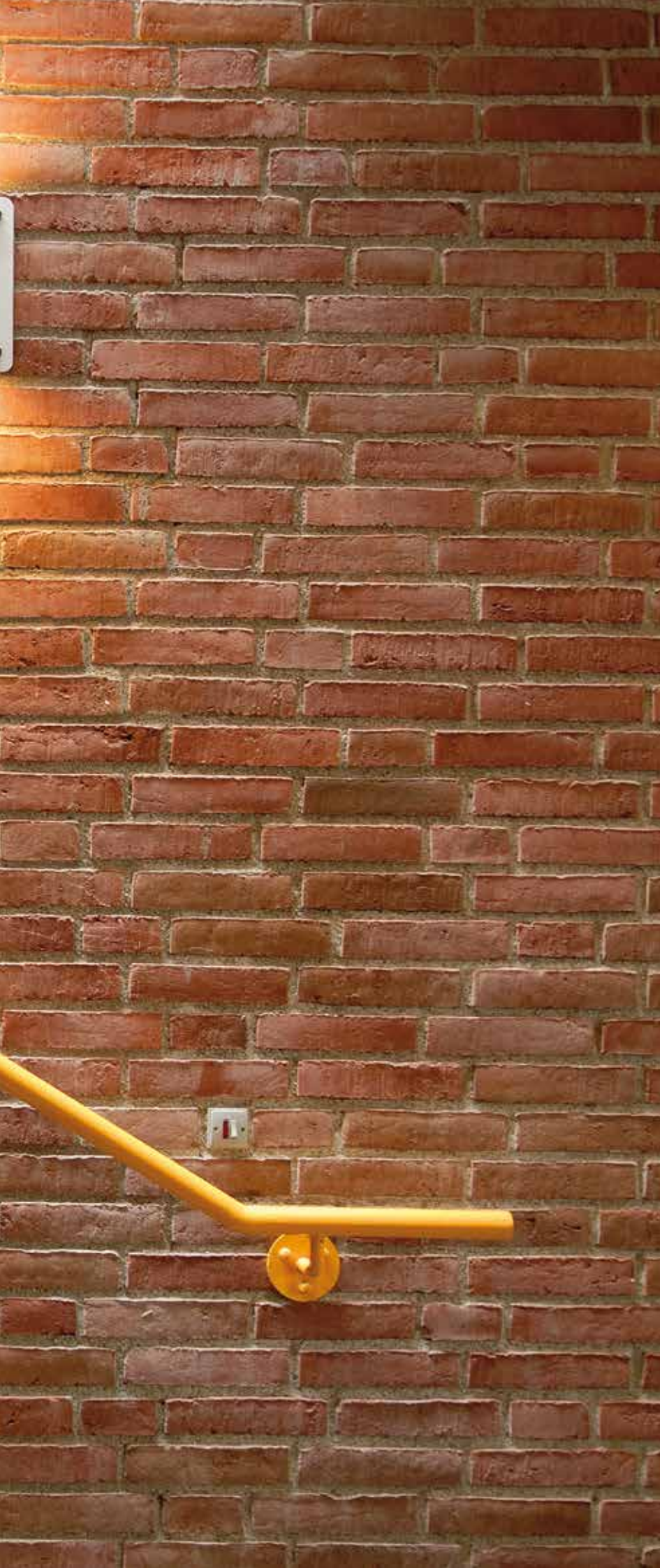


MASONRY MORTARS

MASONRY MORTARS

Classification of masonry mortars

Masonry mortars are classified in accordance to the PN-EN 998-2:2010 standard. *Specification for Mortar for Masonry. Part 2: Masonry mortar.*

It defines performance of fresh mortars, their pot life, chloride content, air content, adjustability. One can also find there many parametres concerning properties of set mortars: compressive strength, joint strength, water absorption, water vapour permeability, thermal conductivity, reaction to fire, density and durability.

The most important standard division classifies masonry mortars as:
- general purpose (G)
- for thin joints (T)
- light (L)

Mortar selection

- Thick joint brick laying
  If we intend to build walls of ceramic elements (bricks, hollow blocks), lime-sand or concrete blocks, cement mortars for thick joints (from 6 to 40 mm) should be used, i.e. general purpose mortars like ATLAS MASONRY MORTAR. Practically, any type of walls can be constructed with these elements: main walls, partition walls, shielded walls, cellar and foundation walls. Traditional trowel is used for brick laying and technique of mortar application must be adjusted to element and joint type listed by the manufacturer.

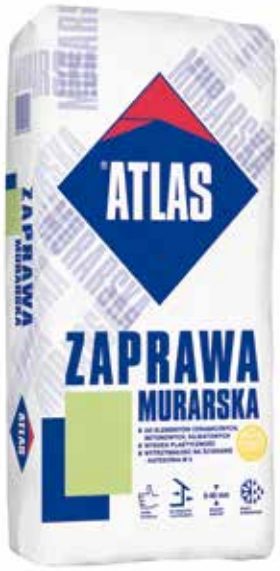
- Masonry with clinker
  Thick joint mortars include also special products for clinker masonry works. Their composition contains trass, i.e. mineral of volcanic origin, which limits the risk of efflorescence occurrence on walls made of clinker. Atlas also offers product of this type - ATLAS MASONRY MORTAR FOR CLINKER. When using these mortars, one should pay special attention to application cleanliness, keeping technological regime (especially amount of mix water added to mortars), carrying out installation in favorable weather conditions and appropriate protection of setting mortar against negative effects of weather.

- Thin joint brick laying
  Masonry mortars for thin joints (from 1 mm to 5 mm) are used with elements of repetitive and exact dimensions and in places where, due to possibility of occurrence of thermal bridging phenomenon, joint width should be reduced to minimum. They are used primarily for walls made of cellular concrete blocks – ATLAS KB-15, or silicate elements – ATLAS SILMUR. Due to the content of polymer binders and small width of joint, the technology of use of these mortars differs significantly from traditional brick laying. Special tools – notched trowels - are used for mortar application, which allows to distribute mortar evenly along whole previously constructed layer.

TABLE 8.1

PRODUCT					
	ATLAS MASONRY MORTAR	MASONRY MORTAR ATLAS M10	ATLAS KB-15	ATLAS MASONRY MORTAR FOR CLINKER	ATLAS SILMUR
	Traditional masonry mortar	Traditional masonry mortar	Masonry mortar for cellular concrete	Masonry mortar with trass	Masonry mortars for silicate elements
Reference document	PN-EN 998-2:2012				
TECHNICAL DATA					
Mortar type*	G	G	T	G	T
Mixing ratio water/dry mix	3-3.5	3-3.5	5.25-6.0	bricklaying: 3.25-3.75 grouting: 2.5	5.0-6.0
Joint width [mm]	6-40	6-40	2-10	6-40	2-10
Compressive strength [N/mm^2]	≥ 5.0	≥ 10.0	≥ 5.0	≥ 5.0	from ≥ 5 up to ≥ 15***
Pot life [h]	4	4	4	3	4
Colour	grey	grey	grey	grey, dark grey, dark brown, beige, graphite, brick red, anthracite - black	grey or white
Mortar preparation and application temperature [°C]	5-30	5-30	5-30	5-30	5-30 0-30**
TYPE OF MASONRY ELEMENTS					
Ceramic	✓	✓			
Clinker				✓	
Lime-sand	✓	✓			✓
Concrete	✓	✓			
Cellular concrete	✓	✓	✓		✓ ***
USE					
Thick joint bricklaying	✓	✓		✓	
Thin joint bricklaying			✓		✓
Grouting				✓	

* G – general use, T – for thin joints
** applies to M15 mortars
*** does not apply to M15 mortars



ATLAS MASONRY MORTAR

traditional masonry mortar

- for ceramic, concrete and silicate elements
- for joints 6-40 mm thick
- high plasticity
- compressive strength – category M5
- joins elements into stable, durable wall

Use

Recommended for bricklaying with traditional, thick joints – allows to correct measurement imprecision of wall elements.
For building above ground floors, cellar walls and foundations – reinforced and unreinforced elements subject to construction requirements.
Joins elements into stable and durable wall – forms soft and resilient framework, which rigid elements like bricks, stones and blocks are embedded in.
Protects individual wall elements against damage – bricks, blocks, hollow blocks – forms a buffer limiting the stress resulting from load of consecutive wall layers as well as changes in ambient temperature and humidity.

Types of masonry elements – bricks, hollow blocks and other similar ceramic, lime sand and concrete materials.

Properties

Compressive strength – category M5.
Factory made – guarantees uniform working parameters of the mortar and technological parameters of the joints after setting.
Easy and comfortable in use – characterized by very good workability, plasticity and high bonding.
Extended pot life – approx. 4 hours.
The mortar can be supplemented with, so-called anti-frost additives allowing to carry out works in low temperature, i.e. below +5°C – the new range of temperature of mortar application, the way of preparation (especially the adjustment of mix water), principles of carrying out works and mortar setting conditions must be set according to the guidelines of the additive manufacturer. The amount of the anti-frost agent depends on the content of cement in the mortar – the ratio cement/fillers in ATLAS MASONRY MORTAR is 1:3.
Note. The manufacturer of the mortar does not bear responsibility for the result and the quality of the anti-frost agents used.

Technical data

ATLAS MASONRY MORTAR is manufactured as a dry mix of high quality cement binder, quartz fillers and improvers..

Bulk density (of dry mix)	approx. 1.5 kg/dm^3
Mass bulk density (after mixing)	approx. 2.0 kg/dm^3
Dry density (after setting)	approx. 2.0 kg/dm^3
Mixing ratio (water/dry mix)	0.12 ÷ 0.14 l/1 kg 3.0 ÷ 3.50 l/25 kg
Min./max. mortar thickness	6 mm / 40 mm
Mortar preparation temperature, substrate and ambient temperature during work	from +5°C to +30°C
Pot life	approx. 4 hours

Technical requirements

The product conforms to PN-EN 998-2 standard. EC Declaration of Performance No. 007/CPR.

CE 1488	PN-EN 998-2:2012 (EN 998-2:2010)
Factory-made masonry mortar, manufactured acc. to design, general purpose (G)	for indoor and outdoor use, in elements subject to structural requirements, designed for reinforced and un-reinforced walls, on masonry walls, posts and partition walls
Compressive strength	≥ 5.0 N/mm^2
Initial shear strength (tabular value)	≥ 0.15 N/mm^2
Chloride content	0.07% Cl
Reaction to fire - class	A1
Water absorption	0.05 kg/m^{2}min^{0,5}
Water vapour permeability coefficient (tabular value μ)	15/35 (EN 1745:2002, table A.12)
Thermal conductivity coefficient (average tabular value P=50%)	0.83 W/mK ($\lambda_{10,dry}$) (EN 1745:2002, table A.12)
Durability. - Compressive strength decrease after 25 freeze-thaw cycles - Mass decrement after 25 freeze-thaw cycles	 ≤ 10% ≤ 3%
Release/content of hazardous substances	See: Safety Data Sheet

The product has been given the ITB Certificate of Conformity No. 1488 CPD-0013/Z and the Radiation Hygiene Certificate.

Bricklaying

Preparation of masonry elements
Bricks, hollow blocks or blocks must be clean, free from dust and dry. Protect against rain and excessive heating when stored.

Weather conditions
Consider weather conditions during bricklaying as well as during mortar setting and drying.

Mortar preparation
Pour the mortar from the bag into a clean container with the suitable amount of water (see Technical Data for ratio) and mix using a mixer with a drill (or in cement mixer) until homogenous. The mortar is ready to use directly after mixing and should be used up within approx. 4 hours.

Bricklaying
The mortar should be used in accordance to the technology of bricklaying with use of cement mortars. Apply mortar with a trowel evenly onto horizontal plane of the previously executed layer. Both horizontal and vertical joints should be precisely filled with mortar (unless another method of laying of particular elements is listed, e.g. tongue and groove joint). Leave an empty joint (5÷10 mm deep) at façade of wall designated for further plastering. Joint thickness should be even over the whole layer and should keep the range from 6 to 40 mm.

Consumption

Wall thickness (full brick)	Consumption - dry mortar, joint thickness approx.. 1 cm	Coverage from a 25 kg bag
1/2 b	approx. 40 kg/m^2	approx. 0.63 m^2
1 b	approx. 100 kg/m^2	approx. 0.25 m^2

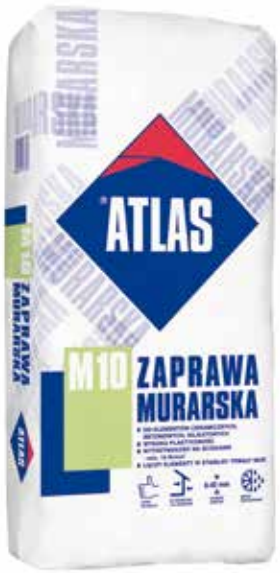
Important additional information

- Adjust the ratio of added water experimentally (keeping the ratio listed in the Technical Data section), following the desired consistency of the mortar, type of substrate and weather conditions. Inappropriate amount of mix water results in deterioration of strength parameters of the mortar.
- Tools must be cleaned with clean water directly after use. Difficult to remove residues of the set mortar can be removed with the ATLAS SZOP agent.
- Contains cement. May cause respiratory irritation. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Keep out of reach of children. Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or a rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Follow the instructions of the Safety Data Sheet.
- The mortar must be transported and stored in tightly sealed bags, in dry conditions (most preferably on pallets). Protect against humidity. Shelf life in conditions as specified is 12 months from the production date shown on the packaging. Content of soluble chromium (VI) in ready-to-use mix - ≤ 0.0002%.

Packaging

Paper bags: 25 kg
Pallet: 1,050 kg in 25 kg bags

The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.
At the time of publication of this product data sheet all previous ones become void.
Date of update: 2014-03-31



ATLAS MASONRY MORTAR M10

traditional masonry mortar

- for ceramic, concrete and silicate elements
- for joints 6-40 mm thick
- high plasticity
- compressive strength – ≥ 10.0 N/mm²
- joins elements into stable, durable wall

Use

Recommended for bricklaying with traditional, thick joints – allows to correct measurement imprecision of wall elements.
For building above ground floors, cellar walls and foundations – reinforced and unreinforced elements subject to construction requirements.
Joins elements into stable and durable wall – forms soft and resilient framework, which rigid elements like bricks, stones and blocks are embedded in.
Protects individual wall elements against damage – bricks, blocks, hollow blocks – forms a buffer limiting the stress resulting from load of consecutive wall layers as well as changes in ambient temperature and humidity.

Types of masonry elements – bricks, hollow blocks and other similar ceramic, lime sand and concrete materials.

Properties

Compressive strength – ≥ 10.0 N/mm².
Factory made – guarantees uniform working parameters of the mortar and technological parameters of the joints after setting.
Easy and comfortable in use – characterized by very good workability, plasticity and high bonding.
Extended pot life – approx. 4 hours.
The mortar can be supplemented with, so-called anti-frost additives allowing to carry out works in low temperature, i.e. below +5°C – the new range of temperature of mortar application, the way of preparation (especially the adjustment of mix water), principles of carrying out works and mortar setting conditions must be set according to the guidelines of the additive manufacturer. The amount of the anti-frost agent depends on the content of cement in the mortar – the ratio cement/fillers in ATLAS MASONRY MORTAR M10 is 1:3.
Note. The manufacturer of the mortar does not bear responsibility for the result and the quality of the anti-frost agents used.

Technical data

ATLAS MASONRY MORTAR M10 is manufactured as a dry mix of high quality cement binder, quartz fillers and improvers.

Bulk density (of dry mix)	approx. 1.5 kg/dm³
Mass bulk density (after mixing)	approx. 2.0 kg/dm³
Dry density (after setting)	approx. 1.8 kg/dm³
Mixing ratio (water/dry mix)	0.12 ÷ 0.14 l/1 kg 3.0 ÷ 3.50 l/25 kg
Min./max. mortar layer thickness	6 mm / 40 mm
Mortar preparation temperature, substrate and ambient temperature during work	from +5°C to +30°C
Pot life	approx. 4 hours

Technical requirements

The product conforms to PN-EN 998-2 standard. EC Declaration of Performance No. 095/CPR.

CE 1488	PN-EN 998-2:2012 (EN 998-2:2010)
Factory-made masonry mortar, manufactured acc. to design, general purpose (G)	for indoor and outdoor use, in elements subject to structural requirements, designed for reinforced and un-reinforced walls, on masonry walls, posts and partition walls
Compressive strength	≥ 10.0 N/mm^2
Initial shear strength (tabular value)	≥ 0.15 N/mm^2
Chloride content	0.1% Cl
Reaction to fire - class	A1
Water absorption	0.1 kg/m^{2}min$^{0.5}$
Water vapour permeability coefficient (tabular value μ)	15/35 (EN 1745:2002, table A.12)
Thermal conductivity coefficient (average tabular value P=50%)	0.83 W/mK ($\lambda_{10, dry}$) (EN 1745:2002, table A.12)
Durability. - Compressive strength decrease after 25 freeze-thaw cycles - Mass decrement after 25 freeze-thaw cycles	≤ 10% ≤ 3%
Ingredients ratio (by weight, %)	Cement:fillers 1:3 Additives below 1%
Release/content of hazardous substances	See: Safety Data Sheet

The product has been given the Radiation Hygiene Certificate.

Bricklaying

Preparation of masonry elements
Bricks, hollow blocks or blocks must be clean, free from dust and dry. Protect against rain and excessive heating when stored.

Weather conditions
Consider weather conditions during bricklaying as well as during mortar setting and drying.

Mortar preparation
Pour the mortar from the bag into a clean container with the suitable amount of water (see Technical Data for ratio) and mix using a mixer with a drill (or in cement mixer) until homogenous. The mortar is ready to use directly after mixing and should be used up within approx. 4 hours.

Bricklaying
The mortar should be used in accordance to the technology of bricklaying with use of cement mortars. Apply mortar with a trowel evenly onto horizontal plane of the previously executed layer. Both horizontal and vertical joints should be precisely filled with mortar (unless another method of laying of particular elements is listed, e.g. tongue and groove joint). Leave an empty joint (5÷10 mm deep) at façade of wall designated for further plastering. Joint thickness should be even over the whole layer and should keep the range from 6 to 40 mm.

Consumption

Wall thickness (full brick)	Consumption - dry mortar, joint thickness approx.. 1 cm	Coverage from a 25 kg bag
1/2 b	approx. 4.0 kg/m^2	approx. 0.63 m^2
1/2 b	approx. 100 kg/m^2	approx. 0.25 m^2

Important additional information

- Adjust the ratio of added water experimentally (keeping the ratio listed in the Technical Data section), following the desired consistency of the mortar, type of substrate and weather conditions. Inappropriate amount of mix water results in deterioration of strength parameters of the mortar.
- Tools must be cleaned with clean water directly after use. Difficult to remove residues of the set mortar can be removed with the ATLAS SZOP agent.
- Contains cement. May cause respiratory irritation. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Keep out of reach of children. Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or a rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Follow the instructions of the Safety Data Sheet.
- The mortar must be transported and stored in tightly sealed bags, in dry conditions (most preferably on pallets). Protect against humidity. Shelf life in conditions as specified is 12 months from the production date shown on the packaging. Content of soluble chromium (VI) in ready-to-use mix - ≤ 0.0002%.

Packaging

Paper bags: 25 kg
Pallet: 1,050 kg in 25 kg bags

The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.
At the time of publication of this product data sheet all previous ones become void.
Date of update: 2015-07-15

ATLAS MASONRY MORTAR FOR CLINKER

masonry mortar with trass

- improved resistance to efflorescence
- water vapour permeability
- resistance to UV-radiation
- for bricklaying with thick joints 6-40 mm
- for grouting bricks and tiles

Bricklaying with no efflorescence

Contains trass – mineral of volcanic origin – which limits the possibility of efflorescence occurrence on the mortar surface.
Filtered aggregate – quartz aggregate used for mortar production is subject to the process of sifting and flushing. Therefore, the grains are free from pollution, soluble salts and other minerals causing the salinity.

Use

Laying bricks and clinker fittings with traditional, thick joints - recommended thickness from 6 up to 40 mm.
Construction of structural and decorative elements – external and curtain walls, wells, posts, fence walls, etc.
Grouting walls constructed of clinker bricks as well as clinker tiles cladding.

Types of masonry elements – clinker or similar elements of low absorbability (3÷8%), bricks, hollow blocks, blocks.

Properties

7 colours – matching typical colour range of clinker: anthracite-black, grey, beige, dark grey, graphite, brick red and dark brown.
Resistance to UV radiation – properly selected chemical composition of powder pigments used in the mortar recipe (iron oxide) makes the mortar resistant to UV radiation. Therefore, intensive colours do not fade and the mortar keeps its strength parameters in operation.
Compressive strength – category M5.
High bonding to elements of low absorbability.
Joins elements into stable and durable wall – forms soft and resilient framework, which rigid elements like clinker bricks are embedded in.
Protects individual wall elements against damage – bricks, blocks, hollow blocks – forms a buffer limiting the stress resulting from load of consecutive wall layers as well as changes in ambient temperature and humidity.
Very good working parametres – properly selected aggregate composition (up to 1.2 mm) makes the mortar easily applied and shaped. Enables large scale bricklaying free of the phenomenon of mortar coming out from bottom layers.

Technical data

ATLAS MASONRY MORTAR FOR CLINKER is manufactured as a dry mix of high quality cement binder, quartz fillers and improvers.

Bulk density (of dry mix)	approx. 1.6 kg/dm^3
Mass bulk density (after mixing)	approx. 1.95 kg/dm^3
Dry density (after setting)	approx. 1.8 kg/dm^3
Mixing ratio – bricklaying (water/dry mix)	0.13 ÷ 0.15 l/1 kg 3.25 ÷ 3.75 l/25 kg
Mixing ratio – grouting (advised water volume) (water/dry mix)	approx. 0.1 l/1 kg approx. 2.5 l/25 kg
Min./max. mortar thickness	6 mm / 40 mm
Mortar preparation temperature, substrate and ambient temperature during work	from +5°C to +30°C
Pot life	approx. 3 hours

Technical requirements

The product conforms to PN-EN 998-2 standard. EC Declaration of Performance No. 086/CPR.

CE 1488	PN-EN 998-2:2012 (EN 998-2:2010)
Factory-made masonry mortar, manufactured acc. to design, general purpose (G)	for indoor and outdoor use, in elements subject to structural requirements, designed for reinforced and un-reinforced walls, on masonry walls, posts and partition walls
Compressive strength	≥ 5.0 N/mm^2
Initial shear strength (tabular value)	≥ 0.15 N/mm^2
Chloride content	0.07% Cl
Reaction to fire - class	A1
Water absorption	0.05 kg/m^{2}min^{0,5}
Water vapour permeability coefficient (tabular value μ)	15/35 (EN 1745:2002, table A.12)
Thermal conductivity coefficient (average tabular value P=50%)	0.83 W/mK ($\lambda_{10, dry}$) (EN 1745:2002, table A.12)
Durability. - Compressive strength decrease after freeze-thaw cycles - Mass decrement after freeze-thaw cycles	 ≤ 10% ≤ 3%
Release/content of hazardous substances	See: Safety Data Sheet

The product has been given the ITB Certificate of Conformity No. 1488-CPD-0013/Z and the Radiation Hygiene Certificate.

Bricklaying

Preparation of masonry elements
Clinker elements must be clean, free from dust and dry. Protect against rain and excessive heating when stored. Due to the possibility of occurrence of slight differences in colour shade between bricks from various production batches, it is recommended to mix bricks coming from several pallets before the work commencement.

Weather conditions
Consider weather conditions during bricklaying as well as during mortar setting and drying. All works have to be carried out in temperature between +5°C and +30°C. During work and afterwards (within min. 7 days), cover masonry elements with foil or mats protecting from precipitation and excessively quick drying caused by wind and sun action. Do not carry out works in precipitation. It is also advisable not to commence work if weather forecast anticipates rain or temperature drop in the following days. Moreover, the masonry structure and its foundations must be appropriately proofed against uncontrolled damp, e.g. capillary action from the substrate.

Mortar preparation for bricklaying or grouting
Pour the mortar from the bag into a clean container with the suitable amount of water (see Technical Data for ratio – note the difference in ratio for bricklaying and grouting) and mix using a mixer with a drill (or in cement mixer) until homogenous. The mortar is ready to use directly after mixing and should be used up within approx. 3 hours.

One stage bricklaying
Lay bricks with full joints, as it limits the possibility of rainwater penetration into the partition. Joint thickness should be even over the whole layer. Prepare an appropriate tool with rounded section made of plastic or wood for the grout shaping. The time of commencement of joint shaping depends on weather conditions, brick absorptivity and the resultant mortar setting. It should be carried out a dozen or several dozen minutes since the mortar application when, if touched, the fresh mortar does not soil fingers. **Note. The degree of mortar setting during grouting needs to be the same for the whole surface.**

Two stage brickwork
To form even joints and keep the level of successive layers, one can use appropriately prepared wooden beads or other limiters (recommended thickness: 10÷12 mm), arranged on the set bricks layer along its edge. The first stage – **bricklaying** – consists in joining bricks with the masonry mortar and leaving space for grout (masonry mortar fills the space between the beads only). **Grouting** the wall with ATLAS MASONRY MORTAR FOR CLINKER should start not earlier than 7 days since the first stage.

Available colours

colour	number
beige	020
brick red	021
dark brown	024
grey	035
dark grey	036
graphite	037
anthracite - black	038

Consumption

With 25 kg bag one can obtain approx. 14 liters of mass.
In order to build 1 m^2 of 12 cm thick wall made of bricks of traditional dimensions, the average consumption is:
– 34 kg of mortar with joint 1 cm thick,
– 40 kg of mortar with joint 1.2 cm thick.

Important additional information

- Use mortar of the same production batch and always use the same amount of mix water for each individual section.
- Pay special attention to cleanliness of laying successive elements. If mortar contacts the face of a brick, remove it as soon as possible (most preferably with a dry method).
- Noncompliance with recommendations and requirements concerning mortar preparation, application and maintenance may result in salt and lime efflorescence. Efflorescence is a natural phenomenon occurring with cement mortars and is not directly related to the application of ATLAS MASONRY MORTAR FOR CLINKER. Salts causing efflorescence may come from other mortars, substrate or clinker elements themselves.
- Adjust the ratio of added water experimentally (keeping the ratio listed in the Technical Data section), following the desired consistency of the mortar, type of substrate and weather conditions. Inappropriate amount of mix water results in deterioration of strength parameters of the mortar.
- Tools must be cleaned with clean water directly after use. Difficult to remove residues of the set mortar can be removed with the ATLAS SZOP agent.
- Contains cement. May cause respiratory irritation. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Keep out of reach of children. Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or a rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Follow the instructions of the Safety Data Sheet.
- The mortar must be transported and stored in tightly sealed bags, in dry conditions (most preferably on pallets). Protect against humidity. Shelf life in conditions as specified is 12 months from the production date shown on the packaging. Content of soluble chromium (VI) in ready-to-use mix - ≤ 0.0002%

Packaging

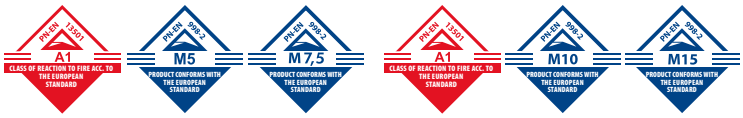
Paper bags: 25 kg
Pallet: 1,050 kg in 25 kg bags

The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.
At the time of publication of this product data sheet all previous ones become void.
Date of update: 2015-04-14

ATLAS SILMUR

masonry mortars for silicate elements

- for walls made of silicates and cellular concrete
- white or grey
- for surface floating
- 4 classes of compressive strength
- can be used in low temperature (SILMUR M-15 only)



Use

The mortar is available in four versions differing in compressive strength:
ATLAS SILMUR M-5 ≥ 5.0 N/mm²
ATLAS SILMUR M-7.5 ≥ 7.5 N/mm²
ATLAS SILMUR M-10 ≥ 10.0 N/mm²
ATLAS SILMUR M-15 ≥ 15.0 N/mm²
ATLAS SILMUR M-10 and M-15 are available on customer order only.
Recommended for constructing walls of silicate elements (all versions), cellular and aerated concrete (SILMUR M-10, M-7.5 and M-5).
Used for bricklaying with thin joints – recommended joint thickness from 2 up to 10 mm (optimum thickness: 2-3 mm).
Used for surface floating and leveling - with recommended coat thickness 2-5 mm.
ATLAS SILMUR M-15 can be used in low temperature – not less than 0 °C during application and not less than -10 °C after 8 hours since the application.
Note: work in low temperature reduces the strength parameters of the mortar.

Types of masonry elements – silicate, cellular and aerated concrete, bricks, hollow blocks and other similar ceramic and concrete materials.

Properties

Available in two colour versions – each ATLAS SILMUR version is available in white and grey colour.
Easy and convenient in use – characterised by very good workability, plasticity and excellent bonding.
High yield – the layer thickness can be monitored when applied with a notched trowel or a dispenser. It results in reduced mortar consumption and speeds up the work progress.

Technical data

ATLAS SILMUR is manufactured as a dry mix of high quality cement binder, quartz fillers and improvers.

Bulk density (of dry mix)	approx. 1.50 kg/dm³
Mass bulk density (after mixing)	approx. 1.75 kg/dm³
Dry density (after setting)	approx. 1.55 kg/dm³
Mixing ratio (water/dry mix)	0.20 ÷ 0.24 l/1 kg 5.0 ÷ 6.0 l/25 kg
Min./max. mortar thickness	2 mm / 10 mm
Mortar preparation temperature, substrate and ambient temperature during work	from +5°C to +30°C from 0°C to +30°C for SILMUR M-15
Pot life	approx. 4 hours

Technical requirements

The product conforms to PN-EN 998-2 standard. EC Declaration of Performance No. 090-1/CPR for SILMUR M-10, No. 090-2/CPR for SILMUR M-15, No. 090-3/CPR for SILMUR M-5 and No. 090-4/CPR for SILMUR M-7.5.

CE 1488	PN-EN 998-2:2012 (EN 998-2:2010)
Factory-made masonry mortar, manufactured acc. to design (SILMUR M-10 and M-15) and acc. to recipe (SILMUR M-5 and M7.5), for thin joints (T)	for indoor and outdoor use, in elements subject to structural requirements, designed for reinforced and un-reinforced walls, on masonry walls, posts and partition walls
Compressive strength SILMUR M5 SILMUR M7.5 SILMUR M-10 SILMUR M-15	 ≥ 5.0 N/mm^2 ≥ 7.5 N/mm^2 ≥ 10.0 N/mm^2 ≥ 15.0 N/mm^2
Initial shear strength (tabular value)	≥ 0.3 N/mm^2
Chloride content	0.07% Cl (SILMUR M-10 and M-15) ≤ 0.1% Cl (SILMUR M-5 and M-7.5)
Reaction to fire - class	A1
Water absorption	0.05 kg/m^{2}min^{0,5}
Water vapour permeability coefficient (tabular value μ)	15/35 (EN 1745:2002, table A.12)
Thermal conductivity coefficient (average tabular value P=50%)	0.83 W/mK ($\lambda_{10, dry}$) (EN 1745:2002, table A.12)
Adjustability	≥ 10 minutes
Aggregate grain size	≤ 1.6 mm
Durability. - Compressive strength decrease after freeze-thaw cycles - Mass decrement after freeze-thaw cycles	 ≤ 10% ≤ 3%
Ingredients ratio for SILMUR M-5 and M-7.5 (by weight)	Cement:fillers 1:3 Additives below 1%
Release/content of hazardous substances	See: Safety Data Sheet

The product has been given the Radiation Hygiene Certificate.

Bricklaying

Preparation of silicate elements

Bricklaying. Clean the surfaces of joined elements of dust and any loose fragments. In order to form thin joint of uniform thickness, it is recommended to sand and dust the surface of previously laid elements.

Surface floating. The surface should be dry, stable, even and sound, i.e. sufficiently strong and cleaned of materials which would impair mortar bonding, especially dust, dirt, lime, oil, fats, wax, residues of oil or emulsion paint. Substrates characterised by excessive absorbability should be primed with ATLAS UNI-GRUNT emulsion.

Weather conditions

Consider weather conditions during bricklaying as well as during mortar setting and drying.

Mortar preparation

Pour the mortar from the bag into a clean container with the suitable amount of water (see Technical Data for ratio) and mix using a mixer with a drill (or in cement mixer) until homogenous. Leave the mortar to rest for 5 minutes and remix. The mortar should be used up within approx. 4 hours.

Bricklaying

Use ATLAS MASONRY MORTAR for the first layer laying and leveling. Apply ATLAS SILMUR layer with a notched trowel evenly onto horizontal plane of the previously executed layer. Apply also the mortar on the vertical contact surfaces of blocks, unless otherwise specified. Press each subsequent element firmly and tap into place using a rubber mallet.

Consumption

Bricklaying

Examples of consumption for blocks 20 cm laid with horizontal joint only

Homogenous wall thickness	Joint thickness approx. 3 mm	Coverage from a 25 kg bag
12 cm	approx. 2.0 kg/m^2	approx. 12.5 m^2
18 cm	approx. 3.0 kg/m^2	approx. 8.3 m^2
24 cm	approx. 4.0 kg/m^2	approx. 6.25 m^2
30 cm	approx. 5.0 kg/m^2	approx. 5.0 m^2
36 cm	approx. 6.0 kg/m^2	approx. 4.16 m^2

Floating

The average consumption is approx. 1.6 kg for 1m^2 for 1 mm layer thickness.

Important additional information

- Do not apply the mortar over a large surface in a single operation, because it retains its bonding properties within approx. 10 ÷ 30 minutes since spreading (depending on substrate properties and ambient conditions). In order to check if joining the blocks is still possible, conduct a test - press the applied mortar with fingers. If the mortar sticks to fingers, then you can fix the next element. If the fingers remain clean, the mortar must be removed and the new layer applied.
- Adjust the ratio of added water experimentally (keeping the ratio listed in the Technical Data section), following the desired consistency of the mortar, type of substrate and weather conditions. Inappropriate amount of mix water results in deterioration of strength parameters of the mortar.
- Tools must be cleaned with clean water directly after use. Difficult to remove residues of the set mortar can be removed with the ATLAS SZOP agent.
- Contains cement. May cause respiratory irritation. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Keep out of reach of children. Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or a rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Follow the instructions of the Safety Data Sheet.
- The mortar must be transported and stored in tightly sealed bags, in dry conditions (most preferably on pallets). Protect against humidity. Shelf life in conditions as specified is 12 months from the production date shown on the packaging. Content of soluble chromium (VI) in ready-to-use mix - ≤ 0.0002%.

Packaging

Paper bags: 25 kg
Pallet: 1,050 kg in 25 kg bags

The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.
At the time of publication of this product data sheet all previous ones become void.
Date of update: 2014-05-22

ATLAS KB-15

masonry mortar for cellular concrete

- for walls made of cellular and aerated concrete
- for blocks, bricks, hollow blocks
- for surface floating
- prevents thermal bridging
- compressive strength – category M5

Use

Recommended for constructing walls of cellular and aerated concrete.
Prevents thermal bridging – provides uniform thermal insulation parameters of the whole partition.
Used for bricklaying with thin joints – recommended joint thickness from 2 up to 10 mm (optimum thickness: 2-3 mm).
Used for surface floating and leveling - with recommended coat thickness 2-5 mm.

Types of masonry elements – cellular and aerated concrete, as well as bricks, hollow blocks and other similar ceramic, lime-sand and concrete element**s.**

Properties

Compressive strength – category M5.
Easy and convenient in use – characterised by very good workability, plasticity and excellent bonding.
High yield – the layer thickness can be monitored when applied with a notched trowel or a dispenser. It results in reduced mortar consumption and speeds up the work progress.
The mortar can be supplemented with, so-called anti-frost additives allowing to carry out works in low temperature, i.e. below +5°C – the new range of temperature of mortar application, the way of preparation (especially the adjustment of mix water), principles of carrying out works and mortar setting conditions must be set according to the guidelines of the additive manufacturer. The amount of the anti-frost agent depends on the content of cement in the mortar – the ratio cement/fillers in ATLAS KB-15 is 1:2.
Note. The manufacturer of the mortar does not bear responsibility for the result and the quality of the anti-frost agents used.

Technical data

ATLAS KB-15 is manufactured as a dry mix of high quality cement binder, quartz fillers and improvers.

Bulk density (of dry mix)	approx. 1.40 kg/dm^3
Mass bulk density (after mixing)	approx. 1.65 kg/dm^3
Dry density (after setting)	approx. 1.50 kg/dm^3
Mixing ratio (water/dry mix)	0.21 ÷ 0.24 l/1 kg 5.25 ÷ 6.00 l/25 kg
Min./max. mortar thickness	2 mm / 10 mm
Mortar preparation temperature, substrate and ambient temperature during work	from +5°C to +30°C
Pot life	approx. 4 hours

Technical requirements

The product conforms to PN-EN 998-2 standard. EC Declaration of Performance No. 008/CPR.

CE 1488	PN-EN 998-2:2012 (EN 998-2:2010)
Factory-made masonry mortar, manufactured acc. to design, for thin joints (T)	for indoor and outdoor use, in elements subject to structural requirements, designed for reinforced and un-reinforced walls, on masonry walls, posts and partition walls
Compressive strength	≥ 5.0 N/mm^2
Initial shear strength (tabular value)	≥ 0.3 N/mm^2
Chloride content	≤ 0.1% Cl
Reaction to fire - class	A1
Water absorption	0.05 kg/m^{2}min^{0,5}
Water vapour permeability coefficient (tabular value μ)	15/35 (EN 1745:2002, table A.12)
Thermal conductivity coefficient (average tabular value P=50%)	0.83 W/mK ($\lambda_{10, dry}$) (EN 1745:2002, table A.12)
Adjustability	≥ 10 minutes
Aggregate grain size	≤ 1.6 mm
Durability. - Compressive strength decrease after 25 freeze-thaw cycles - Mass decrement after 25 freeze-thaw cycles	≤ 10% ≤ 3%
Release/content of hazardous substances	See: Safety Data Sheet

The product has been given the Hygiene Certificate by the National Institute of Hygiene, the ITB Certificate of Conformity No. 1488-CPD-0013/Z and the Radiation Hygiene Certificate.

Bricklaying

Preparation of cellular concrete elements

Bricklaying. Clean the surfaces of joined elements of dust and any loose fragments. In order to form thin joint of uniform thickness, it is recommended to sand and dust the surface of previously laid elements.

Surface floating. The surface should be dry, stable, even and sound, i.e. sufficiently strong and cleaned of materials which would impair mortar bonding, especially dust, dirt, lime, oil, fats, wax, residues of oil or emulsion paint. Substrates characterised by excessive absorbability should be primed with ATLAS UNI-GRUNT emulsion.

Weather conditions

Consider weather conditions during bricklaying as well as during mortar setting and drying.

Mortar preparation

Pour the mortar from the bag into a clean container with the suitable amount of water (see Technical Data for ratio) and mix using a mixer with a drill (or in cement mixer) until homogenous. Leave the mortar to rest for 5 minutes and remix. The mortar should be used up within approx. 4 hours.

Bricklaying

The mortar should be used in accordance to the technology of bricklaying with use of cellular concrete blocks. Use ATLAS MASONRY MORTAR for the first layer laying and leveling. Apply ATLAS KB-15 layer with a notched trowel evenly onto horizontal plane of the previously executed layer. Apply also the mortar on the vertical contact surfaces of blocks, unless otherwise specified. Press each subsequent element firmly and tap into place using a rubber mallet.

Consumption

Bricklaying

Homogenous wall thickness	Joint thickness approx. 3 mm	Coverage from a 25 kg bag
12 cm	approx. 4.0 kg/m^2	approx. 6.2 m^2
18 cm	approx. 6.0 kg/m^2	approx. 4.2 m^2
24 cm	approx. 8.0 kg/m^2	approx. 3.1 m^2
30 cm	approx. 10.0 kg/m^2	approx. 2.5 m^2
36 cm	approx. 12.0 kg/m^2	approx. 2.1 m^2

Floating

The average consumption is approx. 1.6 kg for 1m^2 for 1 mm layer thickness.

Important additional information

- Do not apply the mortar over a large surface in a single operation, because it retains its bonding properties within approx. 10 ÷ 30 minutes since spreading (depending on substrate properties and ambient conditions). In order to check if joining the blocks is still possible, conduct a test - press the applied mortar with fingers. If the mortar sticks to fingers, then you can fix the next element. If the fingers remain clean, the mortar must be removed and the new layer applied.
- Adjust the ratio of added water experimentally (keeping the ratio listed in the Technical Data section), following the desired consistency of the mortar, type of substrate and weather conditions. Inappropriate amount of mix water results in deterioration of strength parameters of the mortar.
- Tools must be cleaned with clean water directly after use. Difficult to remove residues of the set mortar can be removed with the ATLAS SZOP agent.
- Contains cement. May cause respiratory irritation. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Keep out of reach of children. Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or a rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Follow the instructions of the Safety Data Sheet.
- The mortar must be transported and stored in tightly sealed bags, in dry conditions (most preferably on pallets). Protect against humidity. Shelf life in conditions as specified is 12 months from the production date shown on the packaging. Content of soluble chromium (VI) in ready-to-use mix - ≤ 0.0002%.

Packaging

Paper bags: 25 kg
Pallet: 1,050 kg in 25 kg bags

The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.
At the time of publication of this product data sheet all previous ones become void.
Date of update: 2014-06-04