



GARDEN AND LANDSCAPE DESIGN USING NATURAL STONE



STEPPING AHEAD

GEIGER-GRUPPE





MAX BALZ GMBH & CO, Limestone for interior and exterior use

- Wall cladding
- Flooring
- Steps
- Window sills
- Coping stones
- Solid stones/ massive bricks
- Building stones
- Erratic boulders
- Crust slabs
- Cobbles
- Garden accessories/
landscaping products

The company Max Balz was founded in 1888. This makes it the oldest local stone cutting facility in the Jura mountain area between Ingolstadt and Nuremberg.

A modern plant is located immediately next to the company's own quarry and 35 employees process around 4000 to 5000 m³ of raw blocks to all sorts of products every year.

The range includes products for interior, exterior as well as for religious use, including finished stones for construction work.

The company is specialised in facade and solid stonework design requiring superior craftsmanship as well as exclusive garden and landscape designs involving stone.

Products are manufactured CE compliant according to Directive 89/106/EEC of the Council of the European Union and pass the specified tests with proof of conformity.



ZEIDLER & WIMMEL GMBH & CO. KG, Stone building tradition

- Natural stone façades
- Natural stone floors
- Wall cladding
- Steps
- Window sills
- Solid stones
- Special designs
- Sculptures
- Natural stone restorations

Since the foundation of the company in 1776, Zeidler & Wimmel has been engaged in carrying out natural stone work of all kinds and orders of magnitude – according to a traditional unique quality standard and with absolute care and precision, as well as the latest technical developments. As one of the most productive companies in the natural stone industry with a capacity of up to 65,000 m² of facade and paving tiles, Zeidler & Wimmel is in a position to realise demanding building projects on both national and international levels. The plant in Kirchheim near Würzburg with an area of approx. 33,000 m² is equipped with top modern production facilities and is DIN EN ISO 9001 certified. The unhindered access to own quarries yielding constantly changing shell limestone, yellow and red sandstones as well as various soft stones, guarantees fast and reliable project realisation at economic prices.

The product range includes natural stone facades – natural stone floors – wall cladding – steps – window sills – solid stone work – special designs – sculptures – natural stone restorations.



Fountain stones

Unique objects from our quarry including boreholes.

Material: Jura limestone



Fountain troughs

Made of solid natural stone.

Material: Jura limestone, 'Pfraundorf' dolomite

Measurements: optional

Finish: optional



Garden pillars

Made of solid natural stone.

Material: Jura limestone, 'Pfraundorf' dolomite

Measurements: on request

Finish: on request



High quality stone chippings, fine and coarse gravel

For garden design, as jointing material, for drainage of all kinds or for laying floor tiles.

Particle size: on request

Packaging: in big bags of approx 1000 kg

C O N T E N T

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Fountain troughs
Garden pillars
High quality stone chippings,
fine and coarse gravel

We don't spend much time thinking about the material on our roads and paths. All that we normally expect of the surface that we tread on, is that it is made of a material that is suitably durable to fulfil its purpose.

Thinking one step beyond this however, it is always good to know what lines our paths: Garden and landscape design experts and aesthetes love to use solid and natural materials, such as Jura limestone. Rectangular cut, often square flagstones of various sizes and thicknesses demonstrate the beauty of this durable material, while diverse surface treatment styles ensure that a broad range of material is available for selection, with the polygonal 'crazy paving' tiles standing out because of their originality.

STEPPING AND SITTING STONES

FLOORING · STEPS · SITTING STONES

Jura limestone can be used for both vertical and horizontal surface design as well as for special detail features – attractively smoothing even the stoniest path: paving stones create a solid base for those of us with both feet firmly on the ground. Those striving upwards, get there with elegant ease by means of stone steps made of blocks or slabs.

And those who have already made their way, will be happy to find a place to rest and relax on our sitting stones or benches.



Paving tiles

For laying in a gravel bed, for terraces, paths and similar

Thickness: 4 cm, 6 cm

Measurements: Extra long 30 cm or 40 cm wide,
40 x 40 cm, 40 x 60 cm, 60 x 60 cm

- Different tile size and thickness available on request!

Surface: Roughly honed
Sandblasted
Bush hammered
Bush hammered and brushed*
Chiselled*
Antique blasted*
Tumbled*

*not possible for all materials.

Please ask our sales team for more information.



JURA LIMESTONE, roughly honed



JURA LIMESTONE, sandblasted



JURA LIMESTONE, bush hammered

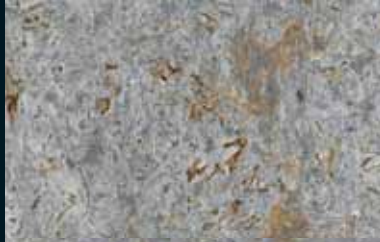


JURA LIMESTONE, chiselled

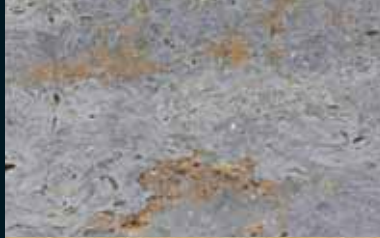




'PFRAUNDORF' DOLOMITE



'KIRCHHEIM' SHELL LIMESTONE, cross cut



'KIRCHHEIM' SHELL LIMESTONE, regular cut



'WARTHAU' SANDSTONE



'LEISTADT' SANDSTONE



'OLSBRÜCK' SANDSTONE



'EICHENBÜHL' SANDSTONE

Polygonal tiles

Irregular, large format, partly sawn edges

Material: Jura limestone, 'Pfraundorf' dolomite

Thickness: 4 cm

• Different thickness available on request!

Surface: Sawn
Roughly honed
Sandblasted
Bush hammered



Cobbles

Mechanically cleaved, natural quarry surface, transported loose

Material: Jura limestone

Height: approx 6 cm, 8 cm, 10 cm, 14 cm

Upper and lower surface sawn, edges partly sawn, partly cleaved

Material: 'Pfraundorf' dolomite

Height: approx 6 cm, 8 cm, 10 cm, 14 cm



'Antique' cobbles

Mechanically cleaved, tumbled surface, transported loose

Material: Jura limestone

Height: approx 6 cm, 8 cm, 10 cm, 14 cm

Material usage: 1 metric ton = approx 9.0 m² for 6cm height
1 metric ton = approx 6.5 m² for 8 cm height
1 metric ton = approx 5.0 m² for 10 cm height
1 metric ton = approx 3.5 m² for 14 cm height

Packaged in big bags on request.



Stone block steps - Special design

Design without profile, surface and front edge finished

Material: Please refer to the images shown for the paving tiles on pages 6-7

Measurements: Width up to 40 cm, lengths on request

Thickness: 10 - 18 cm

Finish: Roughly honed
Sandblasted
Bush hammered

Special designs such as radial steps or profiled steps on request.



Stone block steps - Standard design

Material: Jura limestone, 'Pfraundorf' dolomite

Measurements: 15 x 35 cm

Length: 80 cm, 100 cm, 120 cm

Finish: Surface and front edge sawn
Surface and front edge sandblasted

Additional design alternatives:
Front edge calibrated



Stone slab steps, sawn

Mechanically splitted, tread surface sawn

Material: Jura limestone, 'Pfraundorf' dolomite

Measurements: approx 16 x 35 - 40 cm

Length: approx 60 cm, 80 cm, 100 cm, 120 cm



Stone slab steps, natural quarry surface

Mechanically cleaved, all side surfaces splitted, tread surface rough

Material: Jura limestone

Measurements: approx 16 x 35 - 40 cm

Length: approx 60 cm, 80 cm, 100 cm, 120 cm

Benches

Solid stone designs in various sizes

Material: Jura limestone, 'Pfraundorf' dolomite

Measurements: On request

Surface: On request

Additional design alternatives:
Teak surface



Sitting stones

Solid stone designs, rectangular or square

Material: Jura limestone, 'Pfraundorf' dolomite

Measurements: On request

Surface / Finish:
Sandblasted
Bush hammered
Rubbed
Pointed

Different surface and finish on request



Sitting and border stones

Upper surface naturally rough, front surface mechanically splitted, transported loose, on pallets on request

Material: Limestone

Height: approx 45 - 50 cm

Depth: approx 50 cm

Length: approx 50 - 120 cm

Additional design alternatives:
Rounded edges
Sitting stone with radius
Special sizes
Sitting stone with radius and rounded edges



'Antique' sitting stones

Mechanically splitted, tumbled surface, transported loose, on pallets on request

Material: Jura limestone

Height: approx 45 - 50 cm

Depth: approx 50 cm

Length: approx 50 cm, 100 cm



Limestone has always been a very versatile natural stone material chiefly used in buildings and for outside areas. It has proven itself to be a good building stone for constructing dry walls, terraces, wind shelters and enclosures of fields and meadows. The current trend of building in harmony with the landscape is based on this tradition going back thousands of years.

Limestone from the Jura region is particularly popular for garden and landscape design, because of its attractive colour coupled with superb weather resistant qualities.

SAFE AND SOUND

Building stones · Cladding · Coping stones

Splitted or sawn, many shapes and sizes, polygonal flagstones and cobbles – these materials have many applications in garden and landscape design: Stone cladding, house elements, fences and columns decorate outside private and public areas, cobblestones secure slopes and embankments, dry and layered stone walls provide precious living space for various types of plants and animals.

There is no doubt about it: Natural stones are very valuable products. As nature made them.



Rusticated masonry

Rusticated front, abutting and bearing surfaces sawn.

Material: Jura limestone

Depth of one course: approx 6 - 9 cm

Length: approx 20 - 40 cm

Layer height: 4 cm, 9 cm, 14 cm, 19 cm

Additional design alternatives:

Dimensioned lengths

Rusticated masonry for curvatures (made to measure)

Rusticated heads

Wall cladding for adhesive bonding

Rusticated front, other surfaces sawn

Material: Jura limestone

Depth of one course: approx 2 cm

Length: 20 - 40 cm

Layer height: 4 cm, 9 cm, 14 cm, 19 cm

Additional design alternatives:

Dimensioned lengths

Rusticated heads

Pillars, standard sizes

Prefabricated to measure, rectangular or square

Material: Jura limestone

Measurements: 30 x 30 cm, 40 x 40 cm, 50 x 50 cm etc
30 x 40 cm, 30 x 50 cm, 30 x 60 cm etc
40 x 50 cm, 40 x 60 cm, 40 x 70 cm etc

- Non-standard size pillars on request

Corner pieces

Rusticated fronts, other surfaces sawn

Material: Jura limestone

Depth of one course: approx 2 cm

Length: Shorter sides approx 6 - 12 cm

Longer sides approx 15 - 28 cm

Layer height: 4 cm, 9 cm, 14 cm, 19 cm

Natural crust cladding stones

Fronts naturally rough, other surfaces sawn

Material: Jura limestone

Depth of one course: approx 3 - 10 cm

Length: variable

Layer height: 4 cm, 9 cm, 14 cm, 19 cm





Building stones, small

For dry and layered masonry

Bearing surfaces with natural quarry face

Front side and butt joints machine split, butt joints and rear side partly with traces of drilling. Supplied loose or palletised on request.

Material: Jura limestone

Length: approx 20 - 60 cm

Measurements: approx 8 - 10 cm high, approx 20 - 25 cm deep
 approx 12 cm high, approx 20 - 25 cm deep
 approx 16 cm high, approx 20 - 25 cm deep
 approx 20 cm high, approx 20 - 25 cm deep
 approx 25 cm high, approx 25 - 30 cm deep
 Heights may vary approx ± 2 cm

Bearing surfaces sawn

Front and rear side split, bearing surfaces sawn, butt joints partly sawn. Delivered on pallets.

Material: 'Pfraundorf' dolomite

Length: approx 20 - 60 cm

Measurements: 10 cm high, approx 20 - 25 cm deep
 12 cm high, approx 20 - 25 cm deep
 16 cm high, approx 20 - 25 cm deep
 20 cm high, approx 20 - 25 cm deep
 25 cm high, approx 25 - 30 cm deep
 Heights may vary approx ± 1 cm

Building stones, small for double-shell wall

Bearing surfaces with natural quarry face

Front and rear sides and butt joints machine split, butt joints partly with traces of drilling. Delivered on pallets.

Material: Jura limestone

Length: approx 20 - 60 cm

Depth: according to specification

Height: approx 8 - 10 cm, approx 12 cm, approx 16 cm, approx 20 cm, approx 25 cm, heights may vary ± 2 cm

Bearing surfaces sawn

Front and rear surface machine split, bearing surfaces sawn, butt joints partly sawn. Delivered on pallets.

Material: 'Pfraundorf' dolomite

Length: approx 20 - 60 cm

Depth: according to specification

Height: 10 cm, 12 cm, 16 cm, 20 cm, 25 cm,

Heights may vary approx ± 1 cm

Material usage: 1 metric ton = approx 2.00 m² for 10 - 16 cm height
 1 metric ton = approx 1.70 m² for 20 cm height
 1 metric ton = approx 1.50 m² for 25 cm height

Building stones, large

For dry and layered masonry

Bearing surfaces with natural quarry face

Front side and butt joints machine split, butt joints and rear side partly with traces of drilling. Delivered loose.

Material: Jura limestone

Length: variable

Measurements: approx 30 cm high, approx 30 - 35 cm deep
approx 40 cm high, approx 40 - 45 cm deep
approx 50 cm high, approx 50 - 55 cm deep
approx 60 cm high, approx 60 - 65 cm deep

- Different heights and delivery on pallets on request.

Bearing surfaces sawn

Front and rear surface splitted, bearing surfaces sawn, butt joints partly sawn. Delivered as pallets.

Material: 'Pfraundorf' dolomite

Length: variable

Measurements: approx 30 cm high, approx 30 - 35 cm deep

- Different heights and delivery on pallets on request.



Building stones, large for double-shell wall

Bearing surfaces with natural quarry face

Front and rear surfaces and butt joints machine split, butt joints partly with traces of drilling. Delivered loose.

Material: Jura limestone

Length: variable

Depth: according to specification

Height: approx 30 cm, 40 cm, 50 cm, 60 cm

- Different heights and delivery on pallets on request.

Bearing surfaces sawn

Front and rear surface split, bearing surfaces sawn, butt joints partly sawn. Delivered on pallets.

Material: 'Pfraundorf' dolomite

Length: variable

Depth: according to specification

Height: approx 30 cm

- Different heights available on request!



The height of the stones may fluctuate by ± 5 cm depending on the natural situation. Deliveries are however generally composed of material from one layer.

Material usage: 1 metric ton = approx 1.25 m² for 30 cm height
1 metric ton = approx 1.00 m² for 40 cm height
1 metric ton = approx 0.80 m² for 50 cm height
1 metric ton = approx 1.70 m² for 60 cm height



Masonry slabs, polygonal

Material: Jura limestone
Height: approx 5 - 12 cm
Edge lengths: approx 15 - 50 cm
Packed in big bags



Large retaining stones

Roughly split as required. Delivered loose.
Material: Jura limestone
Length: variable
Measurements: approx 30 cm high, approx 40 - 60 cm deep
approx 40 cm high, approx 50 - 70 cm deep
approx 50 cm high, approx 60 - 80 cm deep
approx 60 cm high, approx 70 - 90 cm deep
• Different heights available on request!



Small retaining stones

Irregular, supplied loose.
Material: Jura limestone
Edge lengths: up to approx 50 cm
Height: approx 16 cm, approx 25 cm,
heights may vary \pm 2 cm



Building stones, unsorted

Roughly split, supplied loose.
Material: Jura limestone
Height: approx 10 - 25 cm
Depth: approx 20 - 40 cm
Length: variable

The height of the stones may fluctuate by \pm 5 cm depending on the natural situation. Deliveries are however generally composed of material from one layer in the quarry.

Natural stone faced prefabricated concrete wall

Precast concrete units with natural stone cladding.

The material used for this product is reinforced concrete (DIN EN 206-1/ DIN 1045-2 compliant) with natural stone cladding on the exposed surfaces.

The natural stone faced prefab concrete wall can be used for strengthening slopes and embankments, as a noise barrier, supporting wall or a screening wall for more privacy.

A truck or tyre crane is required for installation.

Characteristics:

- Functions as a heavyweight wall from a static point of view
- Can be fitted vertically, staggered or inclined
- Short building time
- Any component geometry possible
- Accurate fit
- Large variety of natural stone surfaces

Standard measurements:

Length: 1.0 m, 2.0 m

Depth: 0.5 m

Height: 1.0 m

Different dimensions available on request.

Natural stone material:

- ‘Pfraundorf’ dolomite
- ‘Eichenbühl’ sandstone
- ‘Warthau’ sandstone
- ‘Kirchheim’ shell limestone
- Jura limestone

Different stones available on request. All natural stones are available with different surface finishes.

Coping stones, outside window sills and step covering

Surface finished, front edge honed and bevelled

Stone: Please refer to the images shown for the paving tiles on pages 6-7

Thickness: 4 cm, 6 cm, 8 cm

Surface: Roughly honed
Sandblasted
Bush hammered
Bush hammered and brushed*
Chiselled*

*not applicable on all stones.
Please ask our sales team for more information.

Coping stones, split

Machine split

Material: Jura limestone

Thickness: approx 12 cm, 16 cm

Depth: according to specification

Length: variable



The Romans called them 'gabbione', meaning large cages: Wickerwork filled with stones used as protection from rockfall, but of limited durability due to gradual wear of the natural wickerwork.

Contemporary gabions on the contrary, keep their shape and are very durable. The baskets made of coated steel wire are usually filled with compacted locally available material. Carrier loops allow easy transportation, precise and fast placement. Designs are available for almost any application, including garden or playground design, building supporting walls and noise barriers, securing slopes, embankments, dams and waterfronts. Even concrete facades and steel constructions can be integrated more in the landscape by effective placement of facade and screening baskets

STONE BASKETS SUPPORT AND PROTECT

Stone baskets · Planting baskets

Planting baskets have a lot of recesses. These gaps are perfect niches for grasses, shrubs and small bushes to grow and thrive and provide ideal nesting places for birds. The baskets can be moved any time and are a design feature of special ecological value.



Gabions

Wire baskets filled with stone material

For garden landscaping features, supporting walls, strengthening slopes and embankments, noise barriers, bank reinforcement, securing dams, facades of buildings, playgrounds etc

TSB (TRANSPORTABLE STONE BASKETS):

Baskets supplied complete, filled with compacted stone from our quarries.

FILLED BASKETS:

Filled with crushed dolomite stones

POLYGONAL BASKETS:

Exposed side filled with polygonal slabs

Material: Please refer to the images of paving tiles on pages 6 - 7

Remainder is filled with crushed dolomite stones

BUILDING STONE BASKETS:

Exposed side filled with Jura limestone or 'Pfraundorf' dolomite building stones.

Remainder is filled with crushed dolomite stones

CRUST SLAB BASKETS:

Exposed side is filled with sawn crust slabs, remainder is filled with crushed dolomite stones suitable for hydraulic engineering work

Measurements (50 cm grid):

Basket lengths of 50 to 200 cm

Basket widths of 50 to 100 cm

Basket heights of 50 to 100 cm

Weight or special sizes on request.

Advantage of transportable stone baskets:

- Transportable baskets are made entirely of steel wire coated with Galfan. The corrosion resistant galfan coating passes a 1000 hour salt spray treatment test according to SS DIN 50021. The good long-term effect of the ZnAl5 coating also protects the untreated welded parts of the wire mesh. Galfan coating has a better adhesion to the steel wire compared to conventional hot-dip galvanising.
- The transportable basket is fitted with carrier loops for safe transportation. The carrier loops make it easy to place the baskets in the required position.
- The baskets can be reused again any time.
- The wire thickness makes the baskets retain their shape and serve their purpose for a long time.
- Short building time
- Noise insulating
- Water permeable
- Ecologically valuable





WV FACADE BASKETS

Areas of application:

To cover concrete walls and steel constructions etc.

Filling material: The facade baskets are supplied filled with crushed dolomite or Jura limestone. Other filling with shell limestone or sandstone on request (please refer to the images shown for the paving tiles on pages 6-7).

Measurements: Basket length 104.0 cm
Basket width 14.5 cm
Basket height 51.5 cm

Each basket weighs approx 110 kg. Special sizes on request

SCREENING BASKETS

Areas of application:

Partitions between terraced or semi-detached houses, garden fence, as well as any other type of screening for more privacy.

Filling material / Construction:

The screening baskets are supplied filled with crushed stones suitable for hydraulic engineering work of either dolomite or Jura limestone and anchored in specially manufactured steel framework. Alternative filling material such as shell limestone or sandstone on request (please refer to the images shown for the paving tiles on pages 6-7).

Measurements / Grid size:

Grid length approx 106 cm
Grid width 14.5 cm
Grid height approx 52 cm

Weight or special sizes on request

Advantages of Geiger facade baskets and Geiger screening baskets:

- Geiger facade baskets and Geiger screening baskets are made entirely of galvanized steel wire. Galvanized coating has better adhesion to the steel wire as compared to conventional hot-dip galvanizing.
- Easy installation due to prefabricated steel framework
- Small width / minimal space requirement
- Saving in material and work requirement
- Short building time
- The baskets can be reused again any time.
- Built in spacers prevent the basket from bulging outwards, ensuring an even visible surface.
- Individual design by using different materials
- Can be covered with some greenery without requirement of an additional trellis
- Ecologically valuable



Transportable stone basket for planting

Filling material: The visible side of the stone baskets is covered with cut Jura stones. Other stone material can also be used on request.

The visible side is planted with suitable shrubs, grasses and bushes.

Decomposition resistant water storage mats are fitted inside the baskets for water retention.

Measurements (50 cm grid):

Basket lengths of 50 to 200 cm

Basket widths of 50 to 100 cm

Basket heights of 50 to 100 cm

Weight or special sizes on request

Area of application:

Fortification of embankments, garden design, supporting walls, slope constructions and noise barriers, securing dams, façades of buildings etc.

Advantages of Geiger transportable stone baskets for planting:

- Geiger transportable stone baskets for planting are made entirely of galfan coated steel wire. Galfan coating has a better adhesion to the steel wire as compared to conventional hot-dip galvanising.
- The basket is fitted with carrier loops for safe transportation. The carrier loops make it easy to place the baskets in the required position.
- The baskets can be reused again any time.
- The wire thickness makes the baskets retain their shape and serve their purpose for a long period of time.
- Short building time
- Noise insulating
- Water permeable
- Ecologically valuable

Building site baskets

(Baskets are assembled on site and filled)

‘monotec’ gabions – sturdy design

‘Roko’ gabions – lightweight construction

‘S’ gabions – safe design

Special design for nursery schools and other schools (no wire ends pointing outwards)



Erratic boulders are, as their name implies, large stones found by chance. They are really foreign bodies that appear in the course of the erosion of the surrounding rocks and earth. These unique structures with their interesting shapes imparted by nature, are much sought-after collectors items. They are available in their natural condition or as fountain stones, with a hole drilled to accommodate a water pipe.

The unconventional structured surfaces of crust slabs makes them ideal for individual and natural looking paths and borders, or for covering the front surfaces of stone and planting baskets.

These special products of nature have had an additional human helping hand to make them perfect: garden pillars, welcome columns for climbing plants and solid components of garden enclosures. Natural stone fountain troughs, formerly used as drinking troughs for cattle, are very popular in modern gardens.

UNIQUE OBJECTS AND SPECIAL PRODUCTS

Crust slabs · Erratic boulders · Accessories · High quality chippings

Perfect garden design is unthinkable without high quality chippings and gravel. As a material used to fill joints and crevices or for drainage, a versatile all-rounder in landscape and garden design.



Crust slabs

Large format, polygonal, natural quarry surface

Material: Jura limestone

Thickness: approx 3 - 10 cm



Wall elements

Front natural quarry surface, rear and edges sawn

Material: Jura limestone

Thickness: approx 15 - 20 cm

Measurements: up to 2.20 × 1.00 m



Erratic boulders

Decorative stones formed by nature for garden design

Material: Jura limestone

Measurements: Ø approx 20 - 80 cm

Supplied loose. Palletised on request.



Unique objects from our quarry

For selection on site (Balz Pappenheim company premises)

A large selection is available.

Material: Jura limestone





THE GEIGER GROUP – Your landscape experts

The aesthetics and versatility of natural stone are unsurpassed and it is this beauty and originality of natural stone that has made it regain increasing popularity for garden and landscape design. The demand for natural stone for exterior design applications is increasing steadily. We supply our customers with a traditionally broad range of natural stone products and services, which we can provide together with the combined skills of the companies of our group. Our customers benefit from a whole team of experts, based on decades of tradition and experience, know-how and the latest technology, distinguishing the GEIGER GROUP in each of its areas of specialisation.

The material required for this natural and lasting style is supplied by us:



- Grit
- Stone chippings/
High quality stone chippings
- Chipping mixtures
- Crushed sand
- Crushed sand – chipping mixtures
- Gravel
- Coarse gravel
- Particle mixtures
- Gravel base layers
- Frost protection layers
- Stones for hydraulic engineering work
- Pebble gravel
- Building stones
- Gabions
- Asphalt
- Special mixtures
- ... and lots more!

H. GEIGER GMBH, Stone and Gravel Plant, GaLa Products

Geiger GmbH founded by Hermann Geiger in 1929, now has a workforce of about 210 employees. Future oriented, innovative company policy and competence in processing natural stone products has resulted in the Geiger GmbH Stone and Gravel Plant gaining an important position in Germany's natural stone market.

Several quarries in a region outside Nuremberg known as the Franconian Alps (Frankenalb) are used to supply stone chippings, gravel and concrete aggregates for regional building projects in highway and road construction as well as landscape development. Current reference project: The recently completed 89 km new track of the ICE railway line Nuremberg-Ingolstadt. The materials produced and delivered by H. Geiger GmbH during the construction period included high quality stone chippings and natural sand as concrete aggregate material, gravel base layers, frost protection layers, grit, crushed sand, coarse gravel, stones for hydraulic engineering work, pebble gravel, building stones, asphalt and special mixtures. H. Geiger GmbH is chiefly involved in the supply of traffic construction related building materials.

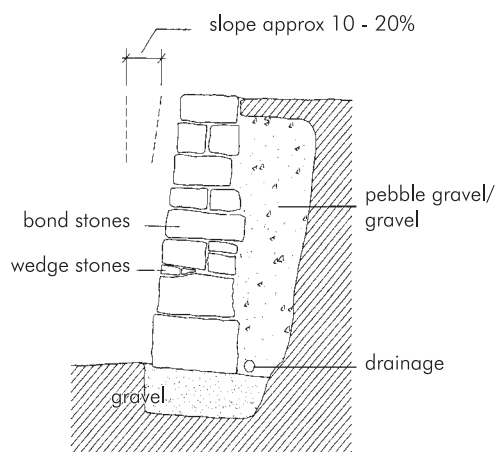
Jura limestone

in garden and landscape design

Limestone is a traditional, attractive natural stone material that has been used in many areas of garden and landscape design. The new trends of construction and garden architecture in exterior design have resulted in a significant increase in the demand for these versatile and interestingly coloured limestone materials. But not all limestone material is adequately suitable for the weather conditions in central Europe.

Bavarian Jura limestone has been used for outside construction work for many centuries, starting from the Romans, followed by baroque master builders and continuing until today. This history supplies a countless number of examples of weather resistance of the stone when used for domestic building elements, enclosures, gravestones, fountains and many more. The particular composition of Jura limestone makes it more weather resistant to aggressive environmental influences than other types of limestone. This is coupled with an interesting patina and plenty of contours, making it highly attractive for design applications. The risk of frost damage can be virtually excluded if the material is selected from appropriate rock layers, an accumulation of wetness is avoided and proper craftsmanship is practiced.

Layered or coursed stones used for constructions should be used in accordance to the natural layering. Horizontal inclusions as well as marl elimination by natural crusts are signs of weathering that are typical for the material and do not represent a deficiency in sedimentary rocks. The procedures specified below have proven to be effective in practice and can therefore be adopted as professional and appropriate methods.



1. It is very important to avoid an accumulation of moisture, because of the typical affinity of limestone towards water. This is why Gala-Design products made of Jura limestone have to be protected from rising and persistent moisture.

2. If Gala-Design products made of Jura limestone are backfilled with soil or similar materials that retain moisture, it is imperative to include a separating layer (separating foil, seepage layer or drainage if applicable)

3. The substructure of all Gala-Design products made of Jura limestone should be composed of a mineral foundation structure (capillary layer). If a concrete foundation is required, then the Jura limestone material placed on the foundation has to be protected against rising damp by means of a separating layer. The substructure design has to always include an adequate gradient to ensure effective water drainage.

4. Construction

- of solid stone steps, step and terrace covering:

On high quality chippings, on special mortar allowing drainage or on pivots.

- of walls and facing stones:

Dry walls have to be built up in layers with simultaneous back-filling.

Mortar walls should be constructed using special mortar for natural stone masonry, with added puzzolana (a volcanic material also called 'trass') to avoid unwanted hydration effects and fitted with coping stones.

Facing stones should be laid using frost-proof natural stone adhesive

and grouted using special natural stone masonry mortar with added puzzolana.

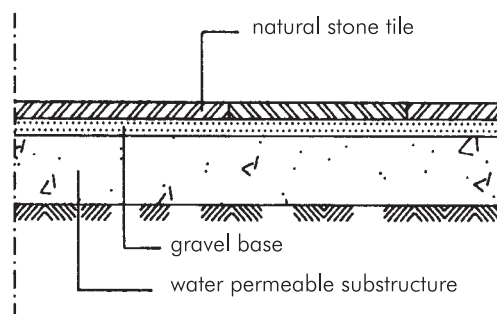
- of paving areas not intended to be used by vehicles:

Utilisation of high quality chippings or special mortar allowing drainage. Floor pavement joints should generally be left open or sealed with material that is specifically permeable to water.

5. Natural stone work using Jura limestone should be completed by October to ensure an adequate drying period of the materials, which is important for effective frost resistance. If Jura limestone is used for constructions in late autumn or winter in between periods of frost, only completely dry natural stone material may be used.

6. Gala-Design products made of Jura limestone are only produced from excavated material layers with suitable structural composition that is generally expected to withstand the annual weather conditions typical of continental climate.

7. The resistance of Jura limestone to frost and thaw conditions as well as the influence of salt is limited. Instead of distributing salt on the ground to make the slippery ice melt in winter, it is therefore recommended to use grit instead.





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