

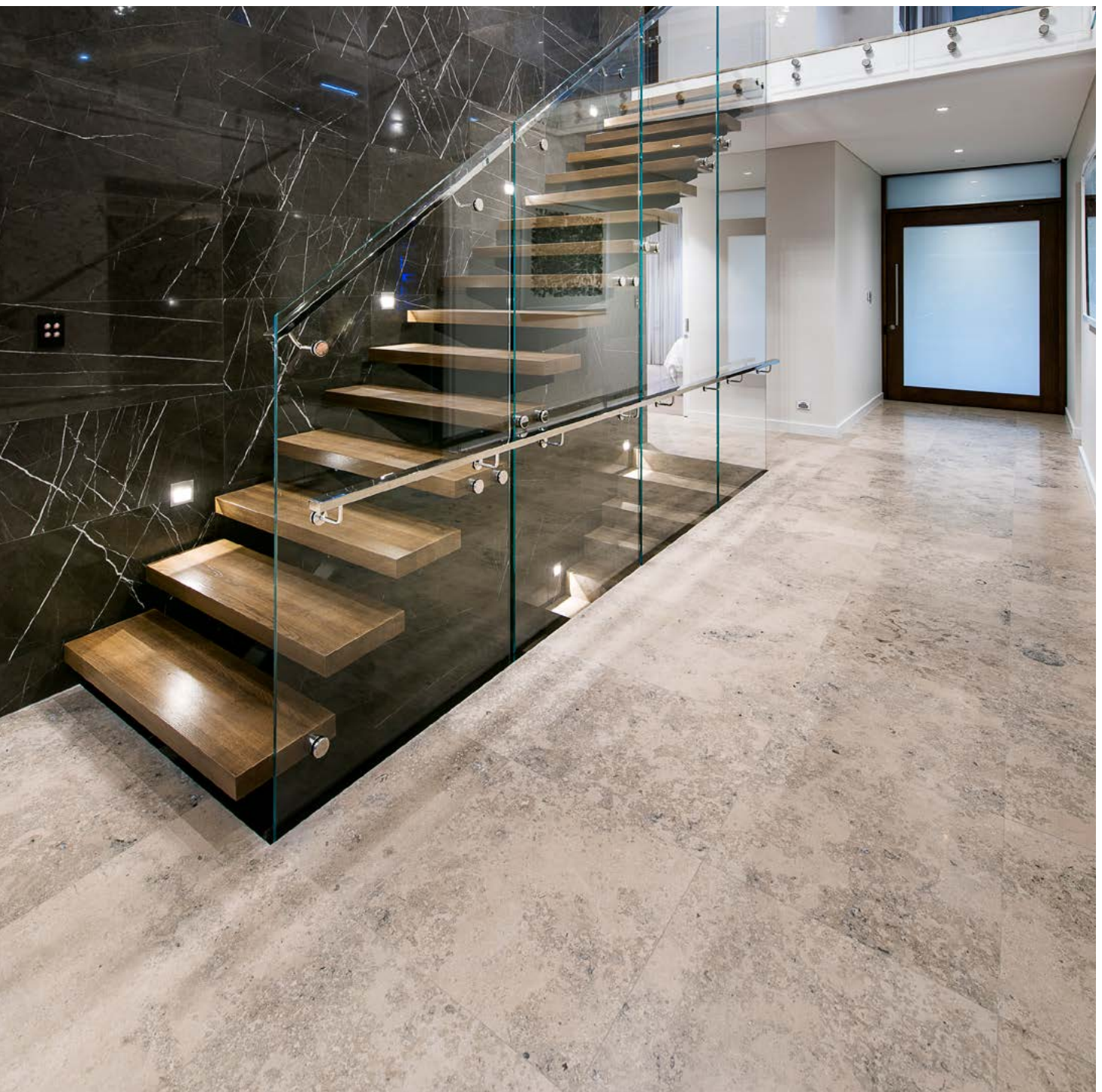


JURA LIMESTONE

TILES AND FLOOR PANELS

Contribution to BREEAM®

(Building Research Establishment Environmental Assessment Method,
BREEAM International New Construction 2016)





The declared tiles and floor panels consist of Jura Limestone. This limestone came into being in the Mesozoic Age approximately 160 million years ago as limestone deposits from a tropical sea near the southern Franconian highlands. The geological formation is called Upper Jura, White Jura or Malm Delta.

This sedimentary rock consists mainly of calcium carbonate (CaCO_3) with admixtures of metal oxides and coloured clays. Jura limestone, also known as Jura marble, occurs in the Franconian limestone highlands in the vicinity of Eichstätt-Treuchtlingen. The material density, polishing ability, the numerous variations in colour and structure and its good abrasion resistance provide the decisive properties for the many possible uses for Jura limestone.

Jura Limestone is the result of unique prehistoric developments. Each stone contains numerous testimonies to prehistoric flora and fauna. The force of nature which created this natural stone and the visible geological documentation give it its special appeal and a timeless character.

The declared products are marketed under the material names of Jura Limestone, Dietfurt Limestone, Dietfurt Limestone gala and Dietfurt Travertine by the Franken-Schotter company.

The declaration applies to material thicknesses of 10 mm to 20 mm and all surface, format and colour variants.

Ordinance (EU) no. 305/2011/CPR (with the exception of Switzerland) applies for placing the product on the market. The product requires a declaration of performance taking into account DIN EN 12057:2015-05 Natural stone products - Modular tiles - Requirements and DIN EN 12058:2015-05 Natural stone products - Slabs for floors and stairs - Requirements and CE labelling. The respective national regulations apply to its use.

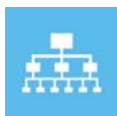
Application

Jura Limestone tiles and floor panels are mainly used as wall, floor and stair treads and risers indoors and outdoors. Apart from their use in living areas such as living rooms and bedrooms, hallways and lobbies, kitchens and bathrooms, stairs and as windowsills, they are often used as floor coverings in high quality commercial areas and public buildings or as wallcoverings or cladding, e.g. in hotels, shopping centres and airports, due to their timeless character and excellent technical properties.





MANAGEMENT



Man 02: Life cycle cost and service life planning

To deliver whole life value from investment and promote economic sustainability by recognising and encouraging the use and sharing of life cycle costing and service life planning.

Product Information

Specific information

Construction process stage

Use stage

End of life stage

Evidence (quality)

-

Reference service life (RSL): Equivalent to the service life of the building or 50 years

Maintenance: damp mopping with water (133 L/m per year) and cleaning agent additive (0.267 kg/m per year)

100 % landfill

Man 04: Commissioning and handover

To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.

HEALTH AND WELLBEING



Not relevant for this product, as the tiles and floor panels don't emit VOC's. The tiles or floor panels must be fixed with adhesives meeting the following limits:

Formaldehyde: ≤ 0.06 mg/m

Total volatile organic compounds (TVOC): ≤ 1.0 mg/m

Category 1A and 1B carcinogens: ≤ 0.001 mg/m

WASTE



Wst 01: Construction waste management

To promote resource efficiency via the effective management and reduction of construction waste.

Product Information

Specific information

Reduction of construction waste

Recycling rate of construction waste

Evidence (quality)

Construction waste is reduced as XXX

XXX

Wst 04: Speculative floor and ceiling finishes

To encourage the specification and fitting of floor and ceiling finishes selected by the building occupant and therefore avoid unnecessary waste of materials.

MATERIALS



Mat 01: Life cycle impacts

To recognize and encourage the use of construction materials with a low environmental impact (including embodied carbon) over the full life cycle of the building.



Product Information

Description	Value	Link
„Product specific“ environmental product declaration available?	yes	See below
EDP Programm Operator	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.) Berlin, Germany	http://ibu-edp.com/en/
Author of the LCA	thinkstep AG, Leinfelden-Echterdingen, Germany	https://www.thinkstep.com/
EPD Number	EPD-FRS-20170102-IBD1-EN	https://edp-online.com/EmbeddedEdpList/Download/8103
System boundaries	Cradle to grave	-
Declare unit	1 t	Average thickness of 30mm; this equals: 25.64 m ²
PCR	Dimension stone for roof, wall and floor applications	-
Green guide rating	See generic Green guide	e.g. element number 806220678 with an A summary rating for use in retail

RESULTS OF THE LCA

1 t Jura Limestone tiles and floor panels

Environmental Impacts

	Product Stage	Construction process stage	Use Stage	End of life stage
Declared life cycle stages (DIN EN 15978)	A1-A3	A4	B2	C4
GWP [kg CO ₂ -eq.]	122.78	4.73	1.11	16.14
ODP [kg CFC11-eq.]	9.77E-11	6.00E-13	5.74E-08	1.52E-11
AP [kg SO ₂ -eq.]	4.75E-01	1.96E-02	2.54E-03	9.54E-02
EP [kg PO ₄₃ -eq.]	6.79E-02	4.84E-03	1.63E-03	1.30E-02
POCP [kg Ethen eq.]	3.17E-02	-7.24E-03	6.43E-04	7.51E-03
ADPE [kg Sb eq.]	2.40E-04	4.92E-07	-1.59E-07	5.79E-06
ADPF [MJ]	1.51E+03	6.43E+01	1.54E+01	2.09E+02

Output Flows and Waste Categories

	Product stage	Construction process stage	Use stage	End of life stage
Declared life cycle stages (DIN EN 15978)	A1-A3	A4	B2	C4
HWD [kg]	2.58E-05	4.06E-06	2.91E-04	3.42E-06
NHWD [kg]	4.28E+03	4.70E-03	2.15E-01	1.00E+03
RWD [kg]	1.69E-02	7.40E-05	1.53E-04	2.92E-03
CRU [kg]	0	0	0	0
MFR [kg]	0	0	0	0
MER [kg]	0	0	0	0
EEE [MJ]	0	0	0	0
EET [MJ]	0	0	0	0



Resource Use

	Product stage	Construction process stage	Use stage	End of life stage
Declared life cycle stages (DIN EN 15978)	A1-A3	A4	B2	C4
PE total [MJ]	8.14E+03	6.87E+01	1.95E+01	2.41E+02
PERE [MJ]	6.59E+03	4.25E+00	3.77E+00	2.52E+01
PERM [MJ]	0	0	0	0
PERT [MJ]	6.59E+03	4.25E+00	3.77E+00	2.52E+01
PENRE [MJ]	1.55E+03	6.44E+01	1.58E+01	2.16E+02
PENRM [MJ]	2.93	0	0	0
PENRT [MJ]	1.55E+03	6.44E+01	1.58E+01	2.16E+02
SM [kg]	0	0	0	0
RSF [MJ]	0	0	0	0
NRSF [MJ]	0	0	0	0
FW [m]	1.08E+01	4.96E-03	1.20E-02	4.10E-02

MATERIALS



Mat 05: Designing for durability and resilience

To recognise and encourage adequate protection of exposed elements of the building and landscape, therefore minimising the frequency of replacement and maximising materials.

Product Information

Item	Description
Durability improvement	No maintenance; very durable product. Reference service life is equal to service life of the building or 50 years.

Mat 06: Material efficiency

To recognise and encourage measures to optimise material efficiency in order to minimise environmental impact of material use and waste-optimisation.

Specific information	Evidence (quality)
Using fewer materials, reusing existing demolition/strip-out materials and, where appropriate, procuring materials with higher levels of recycled content:	XXX
Adoption of alternative means of design/construction that result in - lower materials usage and lower wastage levels including off-site:	





GENERAL INFORMATION

Company name:	Franken-Schotter GmbH & Co. KG
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Homepage:	www.franken-schotter.com
Date:	25.03.2019

TECHNICAL DATA

Following technical data at delivery state are relevant for the declared product:

Name	Thickness [mm]	Density [kg/m]
Tiles and floor panels	10-20	2600

Average mass shares of main components: Jura Limestone is a natural sedimentary stone which is composed mainly of calcium carbonate (CaCO_3) with metal oxides and coloured clays mixed in.

Component	Mass share
Calcium carbonate (CaCO_3)	> 97 wt-%
Dolomite, iron oxide and silicon oxide	1-3 wt-% each
Expoxy-based stone filler	< 0.1 wt-%

GLOSSARY

GWP	Global warming potential
ODP	Depletion potential of the stratospheric ozone layer
AP	Acidification potential of land and water
EP	Eutrophication potential
POCP	Formation potential of tropospheric ozone photochemical oxidants
ADPE	Abiotic depletion potential for non-fossil resources
ADPF	Abiotic depletion potential for fossil resources
PE total	Total use of primary energy resources (=PERT+PENRT)
PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials
PERM	Use of renewable primary energy resources used as raw materials
PERT	Total use of renewable primary energy resources
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
PENRM	Use of non-renewable primary energy resources used as raw materials
PENRT	Total use of non-renewable primary energy resources
SM	Use of secondary material
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Use of net fresh water
HWD	Hazardous waste disposed
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EE	Exported energy per energy carrier
BUG	Building User Guide:

Dedicated building/site specific guidance for the non-technical building user. The purpose of the guide is to help building users access, understand and operate the building efficiently and in a manner in keeping with the original design intent. A Building User Guide will provide easily accessible and understandable information relevant to the following stakeholders:

- The building's staff (or where relevant residents)
- The non-technical facilities management team/building manager
- Other building users, e.g. visitors/community users