



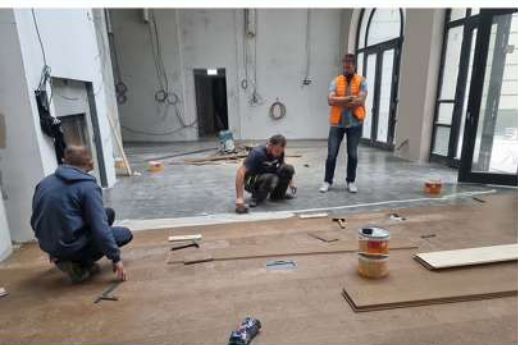
RESIDENTIAL BUILDINGS - Novi Dorcol, stone wool



PUBLIC FACILITIES - Clinical Center, Saint-Gobain facade glass



SIV - Glass with Priva-Lite transparency control



HOTELS - Bristol, Hybrid Hywood Parquet Ter Hürne



RESIDENTIAL BUILDINGS - BW Perla, parquet Admonter



COMMERCIAL FACILITIES - Sirius, glass partitions



INDUSTRIAL FACILITIES - Continental, glass partitions



COMMERCIAL BUILDINGS - Schneider, glass partitions



CONSULTING - Drenik, LEED consulting

Parquet and hybrid parquet  
 Vinyl flooring LVT, laminates  
 Granite ceramics, sanitary ware  
 Raised floors  
 Fireproof, security and special glass  
 Glass walls and doors, glass fences  
 Fire and smoke doors  
 Construction and industrial stone wool  
 Industrial, commercial and outdoor lighting  
 LEED & Construction Consulting



## Parquet



ADMONTER is one of the world's most famous parquet manufacturers, located in the Austrian Alps in Admont and has been producing finished parquet since 1874. The production of multi-layer ready-made parquet ADMONTER is based on fully robotized production, high capacity and environmental protection. These parquets are the favorite choice of architects, investors, buyers throughout Europe and represent the very top of quality.

### PARQUET LAYERS



Construction	Thickness	Top layer	Bottom	Layer Edges
Three-layers	13-15 mm	2.5-3.6 mm	solid wood	edges cut 45°

The main advantages of the finished three-layer parquet are durability, longevity and simple assembly with the possibility of using immediately after installation. It is very durable and stable.



Construction	Thickness	Top layer	Bottom	Layer Edges
Two-layers	10 mm	2.5-3.6 mm	solid wood	edges cut 45°

The advantage of two-layer parquet is reflected in the smaller thickness of 10 mm, which allows better heat transfer and is suitable for underfloor heating. The price is lower than that of three-layer parquet.

### JOINTS



Click system

Tongue & groove

The click system with locking is more stable and can be applied even without gluing the parquet to the substrate, i.e. the parquet is laid dry over the foam substrate. Parquet boards also have a lock on the short side, which contributes to greater stability of the parquet.

### LENGTH OF PLANKS

Lengths: small 590-1200 mm, classic 1200-2400 mm, long 2400-2800 mm, extra long 3500-8000 mm.

Long and extra long parquet of large lengths, suitable for large spaces, special projects (hotels, restaurants...)

### SURFACE STRUCTURE

Surface treatment can be with sanding, brushing, scratching, scraping...



SANDED



BRUSHED



STRATCHED



TRADITIONAL



AUTHENTIC



ANTI-K

## TYPES OF STRIPES FOR PARQUET

- 1 stripe
- 6 stripes - Multibond
- 9 stripes - Multibond



Multibond is three-layers parquet with 6 stripes



Single-laminate parquet in the "Rustic" variant

## KNOTS RANKING



Noblesse – Knotless



Elegance – With a small number of small knots



Basic – Selected knots of smaller dimensions



Naturelle – Multiple knots



Rustic – Natural look of oak without selection

## FILLING THE SAPWOOD (hollows)

The filling can be black or brown. Brown is of higher quality and less different from wood.



brown filler



black filler

## TYPES OF WOOD OF PARQUET

**Hardwood** contains 10 types of wood in 15 different shades. This premium parquet line has perfect stability. The diverse assortment includes oak, walnut, ash...

**Softwood** is made from the highest-quality conifer trees: larch, spruce, pine....The program is composed of four types of wood and 12 different shades. Their warm character and natural elegance fit perfectly into both modern and traditional interiors.



Hardwood-American walnut



Softwood-Douglas pine

## FINAL TREATMENT

Oil finish "easy care" parquet surface is easy to maintain. It is easy to repair scratches by applying oil. It applies to all gradations of nodes (Calm - Placid - Vivid).

Oil has open pores, that is, wood breathes and naturally regulates the humidity of the air in the room. High-quality and sophisticated parquet with an oil finish is reinforced with UV lamps to create a strong protective layer on the surface of the parquet, so users do not have to worry if they spill water, as they will have time to wipe it off before absorbing. It is not necessary to apply additional oil to the parquet over time, but only to clean it regularly.



Matte varnish parquet surface is easy to clean and wear-resistant, Varnish gives a beautiful and elegant look.

The varnish is applied to substrates with fewer knots (Placid, Calm).

An "anti scratch" anti-scratch layer is additionally applied.

Oak is made in several shades: white, stone, natural, medium, marrone...

When the paint is worn or damaged, the surface must be sanded and repainted.





# Parquet

# Ter Hürne

Top quality parquet floors from the German manufacturer Ter Hürne, Grual places on projects where quality and affordable price are appreciated. The parquet floors are three-layered, made of high-quality natural wood, which are ready for installation with ready-made varnish, without subsequent planing and varnishing. They have certificates that are important for ecology and environmental protection. Parquet floors are manufactured with a number of innovations that contribute to excellent quality.



## COLLECTION "CLASSIC"

### BASIC CHARACTERISTICS:

	PLANKS	PLANKS/3-stripes/ BASKET WEAVE (MOSAIC)
Thickness:	13mm	13mm
Dimension:	2190x162mm	2390x200mm
Design:	oak, walnut, beech, ash, maple, cherry	
Borders:	4V - Cut Edges	4V - Cut Edges
Joints:	click	click

### JOINTS - CLICK SYSTEM:



### FINISH:

1. Lacquer
2. Matte lacquer
3. Extra matte lacquer
4. Natural oil

### KNOTS RANKING



1. even - without knots



2. balanced - almost no knots



3. expressive - moderate number knots



4. impulsive - completely natural appearance with knots

### STRIPES:



1-stripe



3-stripes



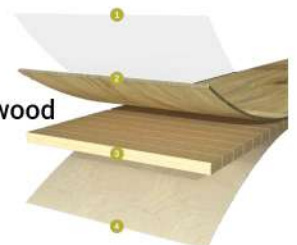
Basket weave (mosaic)

## COLLECTION "HERRINGBONE"

### BASIC CHARACTERISTICS:

Thickness:	12mm
Dimension:	1082x162mm
Borders:	4V - Cut Edges
Joints:	Tongue & Groove PRO

1. Ultra-hard nail polish
2. Supporting layer made of wood
3. Middle layer of wood
4. Stabilizing layer of wood



### KNOTS RANKING



1. Expressive - natural appearance with knots



2. Balanced - moderate number of knots

### EXAMPLES FROM A LARGE PALETTE OF COLORS:



Nature



Sand



Coffee



# Hybrid parquet

Hywood

Hywood is the German parquet of the future. It consists of several layers and has exceptional resistance to scratches, impacts, dirt, and spilled water for up to 24 hours. Hybrid parquet combines the latest technology, an ultra-strong and stable supporting core, and a wooden tread. They are ideal for museums, theaters, concert halls, schools, restaurants, retail spaces...

## CHARACTERISTICS

Resistant to water 24h, pressure, scratches, and dirt.  
 The core is of exceptional strength made of wood composite.  
 The top layer is made of wood with an ultra-hard matte lacquer.  
 Thickness: 11mm. Suitable for underfloor heating.  
 Pattern: oak, walnut, and ash.  
 Large planks: 2197x205mm, 2197x233mm, 2375x270mm.  
 Small planks: 774x129mm (herringbone style).  
 Edge: 4V micro.  
 Joints: click with lock.



WATER RESISTANCE



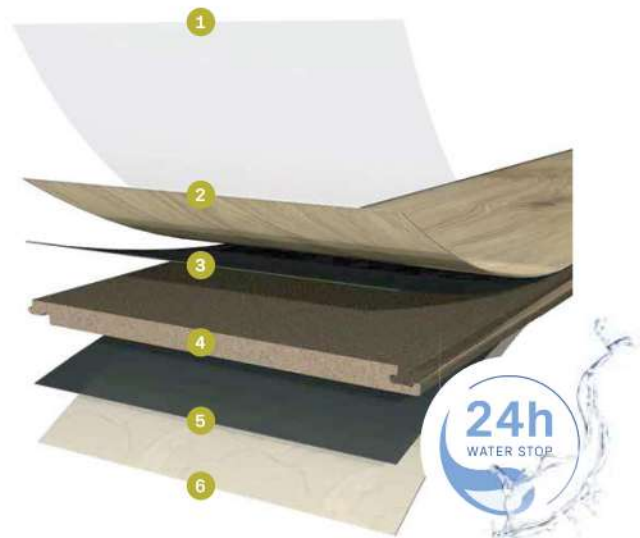
PRESSURE RESISTANCE



SCRATCH RESISTANCE



DIRT RESISTANCE



- 1 Nature Protect Special Protective Layer – Ultra-Hard polish
- 2 Design layer – wood layer
- 3 Wood Powder – a layer of wood powder and resin
- 4 Aqua Seal – Composite Wood Material Board
- 5 Wood Powder – a layer of wood powder and resin
- 6 Layer of wood for stabilization

## ADVANTAGES:

- Fire resistance Bfl-s1 (DIN EN 13501-1).
- Scratch resistance (Hamberger Hobel ≤25 N).
- Water resistance for 24 hours.
- Pressure resistance.
- Resistance to soiling.
- Chair resistance (DIN EN 13329).
- Slip resistance (class R9-R10).
- Stain resistance (68861-1 Class 1B).
- No harmful fumes (EN 717-1 Class E1).
- An eco-friendly product (Eco Institute test).
- Antibacterial.



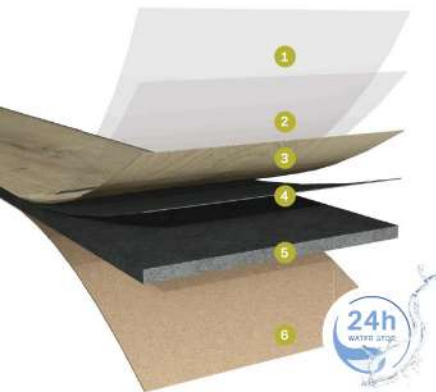


## LVT Vinyl Flooring

Ter Hürne

LVT Soya are floors from the German manufacturer Ter Hürne, which serve for economical adaptation of space, when looking for good design and resistance to various influences. These floors are antibacterial. They are slip resistant. Unlike conventional PVC vinyl flooring, these floors do not contain plasticizers that are harmful, but natural soy-based oil is used, so they meet the criteria for a healthy life.

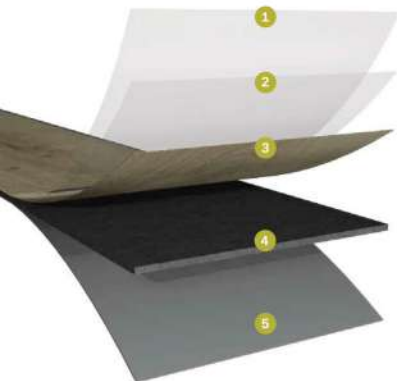
### SOYA COMFORT SEAL - LVT floor with high sound insulation of 20dB and water resistance 24h



- 1 Transparent, durable PU coating
- 2 Transparent protective layer with a Relief Structure
- 3 Printed decorative covering
- 4 LVT Middle Layer
- 5 HDF Plate
- 6 Soundproofing cork

Thickness 9.1mm.  
 Endurance class 23 (residential), 32 (commercial).  
 Antistatic.  
 Antibacterial.  
 Sound insulation 20dB.  
 Water resistance for 24 hours.  
 Fire resistance Bfl-s1 (DIN EN 13501-1).  
 Suitable for underfloor heating.  
 Slip resistance (class R10).  
 Scratch resistance (EN 16094).  
 Dimensions: 221 x 1209 mm.  
 Click placement system - CLICKitEASY Pro.  
 Edge cut 4V.

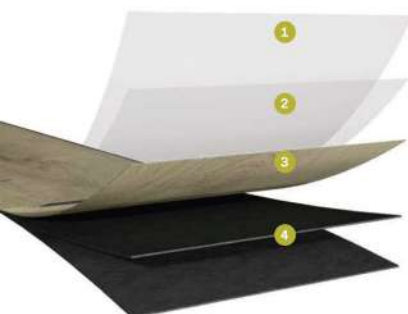
### SOYA SOLID - LVT floor with click system on all 4 sides and high durability class 34



- 1 Transparent, durable PU coating
- 2 Transparent protective layer with a Relief Structure
- 3 Printed decorative covering
- 4 Sturdy Backing Plate
- 5 Soundproofing layer of impact noises

Thickness 6mm.  
 Endurance class 23 (residential), 34 (commercial).  
 Antistatic.  
 Antibacterial.  
 Sound insulation 15 dB.  
 Stain resistance (EN 438-2).  
 Fire resistance Bfl-s1 (DIN EN 13501-1).  
 Suitable for underfloor heating.  
 Slip resistance (class R10).  
 Scratch resistance (EN 16094).  
 Dimensions: 235.0 x 1517.7 mm  
 Click placement system - LOCKitEASY all on 4 sides.  
 Edge cut 4V.

### SOYA PRO - Universal LVT for residential, commercial and industrial buildings without click systems



- 1 Transparent, durable PU coating
- 2 Transparent protective layer with a Relief Structure
- 3 Printed decorative covering
- 4 Double LVT Layer

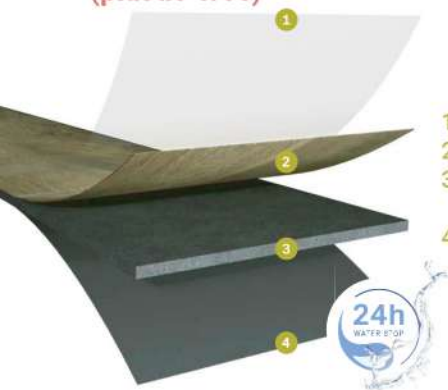
Thickness 2.5mm.  
 Endurance class 23 (residential), 32 (commercial), 42 (industrial).  
 Antistatic.  
 Antibacterial.  
 Suitable for damp rooms.  
 Fire resistance Bfl-s1 (DIN EN 13501-1).  
 Suitable for underfloor heating.  
 Slip resistance (class R10).  
 Scratch resistance (EN 16094).  
 Dimensions: 221 x 1209 mm.  
 Installation by gluing, without clicking system.  
 Edge cut 4V.



## Premium laminates | Ter Hürne

Laminate from the German manufacturer Ter Hürne is an eco-friendly wood flooring that combines practicality, elegance and environmental qualities. The laminate has a water resistance of 24 hours and is suitable for use in wet conditions, so it can be used in all rooms. It is extremely sturdy and robust. It is easy to maintain and antibacterial.

**DURECO - highly durable German laminate Ter Hürne, water-resistant, environmentally friendly wood-based (plastic-free)**



- 1 High-quality varnish with corundum
- 2 Designed Printed Cellulose Layer
- 3 Composite supporting layer of wooden extremely high strength fibers
- 4 Lower stabilizing layer of wood

### FLOOR TRAITS

Thickness: 12mm.  
 Dimensions: 192 x 1285 mm, 327 x 635mm.  
 Endurance class: 23 (residential), 33 (commercial)  
 Material: Wood composite.  
 Water resistance up to 24h.  
 Resistance to micro scratches.  
 Fire resistance Cfl-s1 (EN 13501-1).  
 Choice of wood and stone patterns.  
 Connection: Smart connect pro.  
 Edge: 4V.

### ADVANTAGES:

Water resistance 24h and suitable for wet areas.  
 Suitable for underfloor heating.  
 Slip resistance R10.  
 Easy to set up.  
 Antibacterial properties.  
 Antistatic.  
 Eco-friendly material with Blue Angel certification.  
 It does not evaporate harmful substances A+.



**IKO - German laminate Ter Hürne made of wood, resistant to water 24h, impact and dirt**



- 1 Upper protective layer of transparent synthetic Resins
- 2 Designed Printed Cellulose Layer
- 3 Composite supporting layer of wooden high-density fiber (HDF)
- 4 Lower stabilizing layer of wood

### FLOOR TRAITS:

Thickness: 8mm.  
 Dimensions: 245 x 2003 mm, 195 x 1288mm.  
 Endurance class: 23 (residential), 32 (commercial)

Thickness: 10mm  
 Dimensions: 280 x 1285 mm,  
 126 x 630 mm (herringbone style).  
 Endurance class: 23 (residential), 33 (commercial)

Material: >95% wood.  
 Water resistance 24h.  
 Suitable for underfloor heating.  
 Fire resistance Cfl-s1 (EN 13501-1).  
 Connection: Smart connect pro.  
 Edge: 4V.

### ADVANTAGES:

Shock and dirt resistance.  
 Water resistant and suitable for wet areas.  
 Slip resistance (EN 13893 my ≥ 0.3).  
 Stain resistance (EN 13329).  
 Resistance to damage from chairs (EN 13329).  
 Antibacterial properties.  
 Eco-friendly material with Blue Angel certification.  
 It does not evaporate harmful substances A+.





## Modular carpets 50x50

The "Go to" series has a proven track record of high performance and wear resistance. They are made in England. This range is the choice for users who are looking for a quick option to install quality carpets. "Go to" is offered in two models with sixteen straight weaves and four weaves with ribbed surfaces. In addition to the "Go To" series, there are six other series.

Dimensions of the carpet slab: 50 cm x 50 cm.

Total thickness: 5.5 mm.

Quick installation without glue or with Velcro glue.

Abrasion resistance: Class 33 heavy commercial use (BS EN 1307).

Fire resistance: Euroclass Bfl-s1.

Chair protection: BS EN 985 Pass - (continuous use).

Voltage test: BS ISO 6356:2000 <2kV.

Impact noise reduction: 20 dB (BS EN ISO 10140-3:2010).

Impact noise reduction to 1000 Hz: 27.5 dB (BS EN ISO 10140-3:2010).

VOC: Class A+.

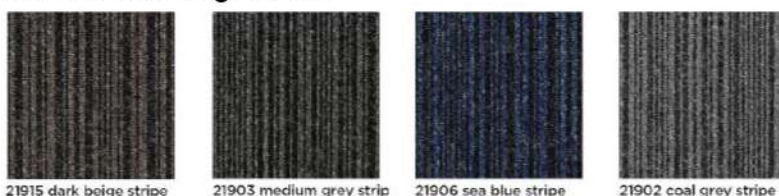
### ADVANTAGES:

- Excellent value for money.
- Possibility of combining patterns.
- Excellent design and color quality.
- Easy to clean.
- It does not absorb moisture.
- Quick and easy installation.
- Excellent module fit.
- LEED product documentation.
- Dimensions 50x50cm and 25x100 cm.

### Straight weaves "GO TO"



### Ribbed weaving "GO TO"



Office



Faculties



Restaurants

## CORDIALE

Dimensions: 50x50cm  
Thickness: 7.8mm  
Load Class: Heavy Contract  
Flammability class: Bfl-s1  
Colors: 32 different colors



## STANDING STONES

Dimensions: 50x50cm  
Thickness: 7mm  
Load class: 33 (heavy commercial use)  
Flammability class: Bfl-s1  
Colors: 16 different colors



## SNOWFALL

Dimensions: 50x50cm  
Thickness: 7mm  
Load class: 33 (heavy commercial use)  
Flammability class: Bfl-s1  
Colors: 16 different colors



## OSAKA

Dimensions: 50x50cm  
Thickness: 7.5mm  
Load class: 33 (heavy commercial use)  
Flammability class: Bfl-s1  
Colors: 12 different colors



## INFINITY

Dimensions: 50x50cm  
Thickness: 6.8mm  
Load class: 33 (heavy commercial use)  
Flammability class: Bfl-s1  
Colors: 16 different colors



## ACADEMY

Dimensions: 50x50cm  
Thickness: 7.8mm  
Load Class: Heavy Contract  
Flammability class: Bfl-s1  
Colors: 32 different colors





## Granite ceramics from Italy



Italian granite ceramic manufacturers Florim, Ceramica di Sirone and Progetto Baucer cover the mid-to-high-end segment in terms of technology, standards, innovation and design in a country whose ceramics industry has traditionally been a world leader in all these aspects.

### Florim



All tiles are granite, rectified (monocaliber), according to ISO-10545-2, ISO-10545-3, ISO-10545-4, ISO-10545-6, ISO-10545-9, ISO-10545-12, ISO-10545-13 and ISO-10545-14 standards.

Within each brand, there is a harmony of design that allows different collections to be combined, using a large number of available dimensions, from 30x60 (9mm thick) to 160x320cm (6mm thick).

### Ceramica di Sirone

Ceramica di Sirone is a manufacturer of monochromatic granite ceramic tiles, with a moisture absorption percentage of <0.5%, whose design is always up-to-date.



### Progetto Baucer

Progetto Baucer is a manufacturer of granite ceramic, rectified tiles with dimensions of 30x60, 60x60, 60x120 and 80x80cm, in thicknesses of 9mm and 20mm, with a reduced selection of patterns and formats, but with an excellent price-quality ratio, which recommends it for larger projects.





# Sanitary ware and fittings



The Italian manufacturer of sanitary ware FLAMINIA and the Italian manufacturers of fittings GESSI and FANTINI are premium brands that are characterized by superior design and quality of workmanship. The production of sanitary ware and fittings is in Italy. They are recognized all over the world for their always innovative design that is always one step ahead of the competition.

## Flaminia

Flaminia sanitary ware has been produced since 1955 in the city of Castellana, whose design is signed by the world's top designers.



## Gessi

Over the years, GESSI has become the number one brand in Europe in the production of premium fittings, the highest level of craftsmanship, with a design that always pushes the boundaries. The variety of metalworking, perfection of workmanship and attention to detail are what elevate it to the very top.



Inverso



Ventaglio



Origini



Habito

## Fantini

Since 1947, Fantini fittings have been owned by the same family, from Pella, where metalworking has a long tradition, with design and quality they have risen to the top of the world and are still there today.





# Granite Ceramics



Thevid granite ceramics, represented by Grual, has a CE certificate and meets the requirements of ISO international certification. This granite ceramic belongs to class I with excellent surface and edge treatment.

## ADVANTAGES:

- Water absorption < 0.5% / ISO 10545-3.
- Strength >1800 N/ISO 10545-11.
- Surface abrasion resistance / ISO 10545-7.
- Chemical resistance / ISO 10545-13.
- Frost resistance / ISO 10545-12.
- Stain resistance / ISO 10545-14.
- Slip resistance / ISO 10545-17.

## DIMENSION:

- 600x600mm.
- 600x900mm.
- 600x1200mm.
- 800x800mm.
- 800x1600mm.
- 800x2400mm.
- 1200x1800mm.

## GLAZED GRANITE TILES

### 1. Glossy finish

These tiles are highly resistant to stains, scratches, and moisture, making them ideal for residential and commercial purposes.

Over 500 designs and various collections (Dark-Light, Marble, Granite, Rainbow, Book-match, DC, Endless and Statuario).



### 2. High glossy finish

They offer mirror-like surfaces, which create timeless spaces.

Over 100 different designs (Dark HG, Super HG, Endless HG and Super White).



### 3. Matte finish

Smooth, non-reflective finish. Each matte design can be made in R11 anti-slip form.

Over 200 designs (Matt Series, Terrazzo Series).



#### 4. Carving finish

They are available in a wide range of colors, patterns, and finishes. They can mimic natural materials such as wood or stone, offering a wide range of design options.

Over 300 designs, suitable for both floors and walls.



#### 5. Simulation of wooden parquet

They mimic the texture of real wood, offering a warm and elegant aesthetic.

Over 300 designs and finishes (Matt, Punched, Punched, R11 and Carving).



#### R11 ANTI-SLIP TILES

Designed to provide superior slip resistance, even when the surface is wet.

Available in different designs, suitable for kitchen, bathroom and entrance areas due to their characteristics.

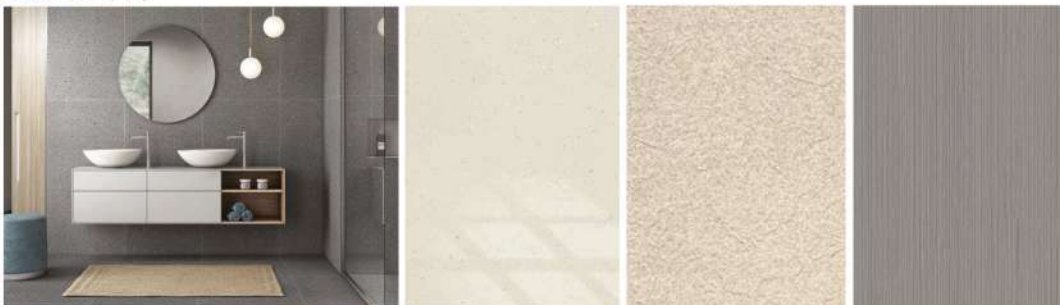


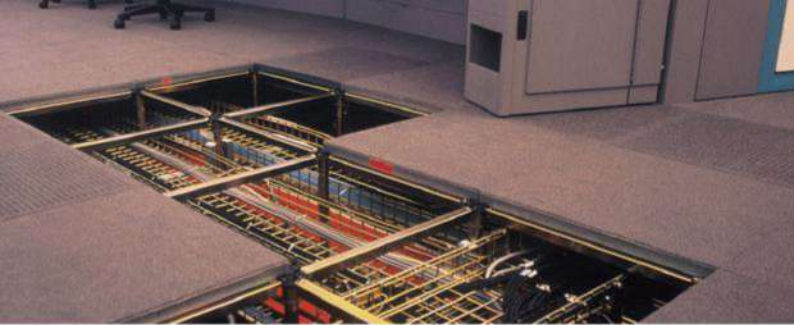
#### "FULBODY" TILES

They are made with a uniform composition throughout the tile, which means that the color and texture pass through the entire structure.

They are very durable, which makes them suitable for high-traffic areas.

They are available in multiple finishes that are used to enhance texture, not as a separate layer (matte, polished, embossed..)





# Raised floors

Raised floors consist of legs and support plates, which are used to carry out installations in the floor. The panels are 60x60 cm format and can be made of calcium sulfate, chipboard, metal, glass, with underfloor heating, with antistatic foil...

### Panel:

Dimensions: 600 x 600 mm (special dimensions possible)  
 Panel thickness: ~ 30 mm  
 Surface: --  
 Underside: Aluminium foil on request  
 System weight: ~ 49 kg/m<sup>2</sup> (without floor covering, floor height 250 mm)  
 Panel weight: ~ 16,7 kg/pc  
 Panel material: Fibre-reinforced calcium sulphate

### Understructure:

Module: 600 x 600 mm  
 Pedestal material: Steel, galvanized  
 Construction height: ~ 55-1800 mm FFH  
 Stringer: --  
 Recommendation: Use stringers generally for floor heights > 500 mm, e.g. u-type stringer

### Load values: 1)

Point load / deflection class: 2.000 N / A  
 Load class according to EN 12825: Class 1  
 Ultimate load: ≥ 4.000 N  
 Safety factor: ≥ 2,0  
 Certificate of conformity: Load step 2.000 N  
 Tested with indenter ø 80 mm: 3.000 N

### Electrostatic: (DIN EN 1081 / DIN IEC 61340-4-1)

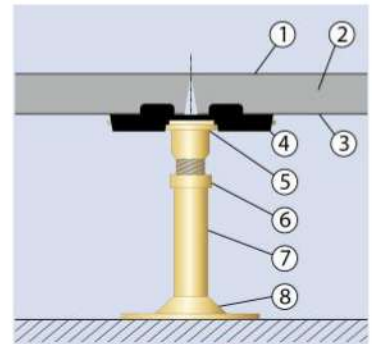
Depending on floor covering: R2 respectively RG > 105 Ohm  
 Without floor covering: R2 respectively RG > 109 Ohm (conductive type possible on request)

### Fire protection:

Building material class (DIN EN 13501-1): A1  
 Fire resistance class (DIN 4102-2): F30 possible up to FFH 1210 mm

**Coefficient of thermal conductivity: (basic material)~ 0,44 W/mk**

**Sound absorption: (DIN EN ISO 717-1 resp. -2) 2)**



1. Floor covering or steel sheet
2. Calcium sulfate floor slab
3. Upon request, steel sheet or aluminum foil
4. Bracket
5. The head of the foot
6. Thread
7. Leg tube
8. Leg base glued to the base



Sound absorbing fascia		horizontal		vertical		Sound reduction index R <sub>w,P</sub>
		Normalized flanking impact sound pressure difference D <sub>n,f,w,P</sub> in [dB]	Normalized flanking impact sound pressure level L <sub>n,f,w,P</sub> in [dB]	Reduction of impact sound pressure level ΔL <sub>w,P</sub> in [dB]		
				Without pads	With pads <sup>3)</sup>	
Textile covering Surface	without	50 <sup>4)</sup>	48 <sup>4)</sup>	27 <sup>4)</sup>	--	--
	with	--	--			
Hard covering Surface	without	49 <sup>4)</sup>	71 <sup>4)</sup>	15 <sup>4)</sup>	--	66 <sup>4)</sup>
	with	--	--			

1. The loads are depending on the test conditions, especially on the test method and the size of indenter. Distinguishes between an elementary test acc. to the rules of use of EN 12825 and a historically grown component test method with an indenter of ø80 mm. Recommends the values acc. to the rules of use EN 12825.

2. Coverings have to be considered. The acoustic values were tested in laboratory conditions. Conditions at site have to be considered differently- see norm VDI 3762. Values derive from type 6 N28.

3. Load values can be reduced through the use of sound absorbing pads

4. According to DIN EN ISO 717-1 resp. -2



# Fireproof and safety glass

## FIREPROOF GLASS CHOOSING THE APPROPRIATE PROTECTION

	Fire resistance (in minutes)				Remains transparent in case of fire
	30'	60'	90'	120'	
E	●				Remains transparent in case of fire
E					

It provides physical protection against flames, hot poisonous gases and smoke. Heat radiation is higher.

	Fire resistance (in minutes)				Remains transparent in case of fire
	30'	60'	90'	120'	
EW	●	●			In case of fire, it creates an opaque layer
EW	●	●			
EW	●	●	●	●	

Provides physical protection against flames, hot toxic gases and smoke, with reduced heat transfer.

	Fire resistance (in minutes)				In case of fire, it creates an opaque layer
	30'	60'	90'	120'	
EI	●	●	●	●	In case of fire, it creates an opaque layer
EI	●	●	●	●	

Provides physical protection against flames, hot toxic gases, and smoke with significantly reduced heat transfer.

Product	Type Thickness/type (mm)	Weight (kg/m <sup>2</sup> )	Light transmission LT (%)	Sound insulation Rw(dB)
PYROSWISS	E30 6 PY	15	89%	32
PYROSWISS	E30 8 PY	20	88%	34
PYROSWISS	E30 10 PY	25	88%	36
PYROSWISS	E30 12 PY	30	87%	37
PYROSWISS SATINOVO	E30 6 PY Satinovo (Satimat)	15	/	32
PYROSWISS STADIP	E30 66,2 (12,76)	31	85%	38
PYROSWISS CLIMAPLUS	E30 6 PY – 14 Argon – 6 PY	31	79%	33

VETROFLAM	EW60 6 VF	15	80%	32
VETROFLAM STADIP	EW60 66,2 (12,76)	31	78%	35
VETROFLAM CLIMAPLUS	EW60 6 Float – 14 Argon – 6 VF	31	73%	33
CONTRAFLAM LITE	EW30 13 CFL	30	87%	37
CONTRAFL. LITE CLIMAPLUS	EW30 6 Planitherm/14 Argon/13 CFL	45	76%	41
CONTRAFLAM LITE	EW60 14 CFL	31	85%	38
CONTRAFL. LITE CLIMAPLUS	EW60 6 Planitherm/14 Argon/14 CFL	47/46	76%	41
CONTRAF. STRUCTURE LITE 30	EW30 20 CFS LITE	42	83%	39
CONTRAF. STRUCTURE LITE 60	EW30 20 CFS LITE	42	83%	39

CONTRAFLAM 30	EI30 16 CF	34	86%	38
CONTRAFLAM 30	EI30 6 Planitherm/14 Argon/16 CF	49	75%	42
CONTRAFLAM 60	EI60 25 CF	52	82%	41
CONTRAFLAM 60	EI60 6 Planitherm/14 Argon/25 CF	67	73%	44
CONTRAFLAM 90	EI90 36 CF	72	80%	45
CONTRAFLAM 120	EI120 58 CF	108	67%	46
CONTRAFLAM STRUCTURE 30	EI30 23 CFS	52	81%	42
CONTRAFLAM STRUCTURE 60	EI60 31 CFS	69	78%	43

## SAFETY GLASS



Product	Type	Thickness (mm)	Weight (kg/m <sup>2</sup> )	Maximum width (mm)	Maximum height (mm)
Burglary resistant	Vetrogard	PB 15-27	33-58	2600	4000-5000
	Polygard	PB 15-17	28-30	1500	2900
Bulletproof	Vetrogard	BR,SG 13-85	32-206	1500-2600	2500-5000
	Vetrogard Climaplus	BR 56-88	107-193	2000-2300	3600-3800
	Polygard	BR,SG 18-38	34-84	1200-1500	2900
Explosion resistant	Vetrogard	ER 10-33	22-83	2400-2600	4000-5000
Burglary resistant+ Bulletproof	Vetrogard PRO	BR,SG,PB 35-54	80-129	2600	4000-5000
	Vetrogard PRO Climaplus	BR,SG,PB 58-73	115-147	2000	3800
	Polygard PRO	BR,SG,PB 21-38	43-84	1200-1500	2900
Housebreaking resistant + fire resistant	Contraflam Polygard	PB,EL 30-37	59-76	1400	2500-2800
	Contraflam Vetrogard	po zahtevu			
Transparency control and fire resistance	Priva - LITE	Transparent/Opaque option			

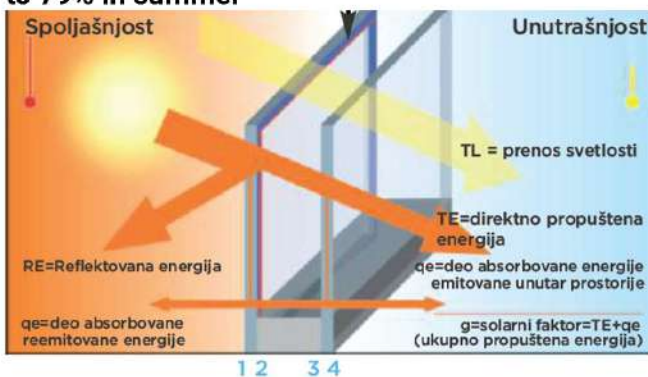


## Treated glass

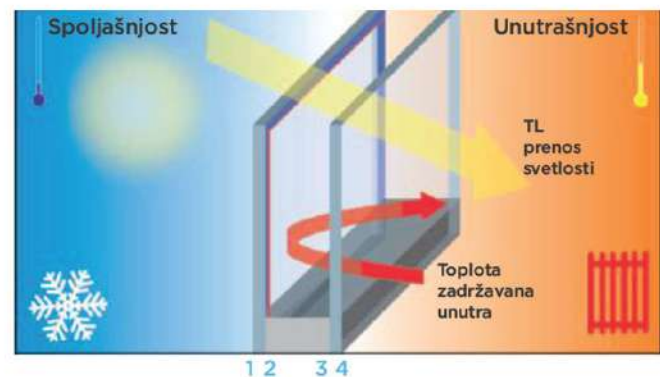
Grual offers finished glass products for energy-efficient aesthetic and sustainable solutions for glass facades as well as interior glass. Effective façade glass can deflect up to 79% of the heat from the sun, making the building energy efficient. Glass packages or treated glass are delivered ready for installation.

Type of glass	Saint-Gobain Glassolutions	Light transmission LT	Solar factor g	Ug(DGU) (W/m2k)	Ug(DGU) (W/m2k)
<b>FACADE GLASS PACKAGES</b> Features for Glass Package 6-16-4	Cool Lite Xtreme70/33 II with Easypro	70%	33	1	0,6
	Cool Lite Xtreme 70/33	70%	33	1	0,6
	Cool Lite Xtreme 61/29 II with Easypro	61%	29	1	0,6
	Cool Lite Xtreme 61/29	61%	29	1	0,6
	Cool Lite Xtreme 50/22 II with Easypro	47%	21	1	0,6
	Cool Lite Xtreme 50/22 II	47%	21	1	0,6
	Cool Lite SKN 083 II with Easypro	76%	41	1	0,6
	Cool Lite SKN 083	76%	41	1	0,6
	Cool Lite SKN 183 II with Easypro	75%	40	1	0,6
	Cool Lite SKN 183	75%	40	1	0,6
	Cool Lite SKN 075 II with Easypro	71%	36	1	0,6
	Cool Lite SKN 175 II with Easypro	70%	35	1	0,6
	Cool Lite SKN 076 II with Easypro	71%	38	1	0,6
	Cool Lite SKN 076	71%	38	1	0,6
	Cool Lite SKN 176 II with Easypro	70%	37	1	0,6
	Cool Lite SKN 176	70%	37	1	0,6
	Cool Lite SKN 065 II with Easypro	62%	35	1	0,6
	Cool Lite SKN 065	62%	35	1	0,6
	Cool Lite SKN 165 II with Easypro	61%	34	1	0,6
	Cool Lite SKN 165	61%	34	1	0,6
	Cool Lite SKN 054 II with Easypro	53%	29	1	0,6
	Cool Lite SKN 054	53%	29	1	0,6
	Cool Lite SKN 154 II with Easypro	52%	28	1	0,6
	Cool Lite SKN 154	52%	28	1	0,6
	Cool Lite SKN 044 II with Easypro	43%	23	1.1	0,6
	Cool Lite SKN 144 II with Easypro	42%	23	1.1	0,6
	Cool Lite KN 177 II with Easypro	70%	48	1	0,6
	Cool Lite KN 166 II with Easypro	61%	39	1	0,6
	Cool Lite KN 148 II with Easypro	47%	32	1	0,6

Effective protection from the heat of the sun up to 79% in summer



Effective thermal insulation in winter Ug=0.56-1



## Priva-Lite transparency control glass

Priva-Lite glass allows the transition from transparent to non transparent glass in just one click. The glass is laminated and consists of liquid crystals that are in the foil between two glasses. It can be in 12 colors.



### ADVANTAGES

- Remote control control.
- Low power consumption.
- An immediate and quiet change of situation.
- Reliability over time - CE certificates.

## Eglass glass with heaters for lanterns, swimming pools, rooftops

Eglass is laminated glass that has a foil with heaters in the middle. It is used for facades and lanterns to melt snow, or at swimming pools and greenhouses to avoid fogging and condensation of glass.

### ADVANTAGES

- There may also be a radiator in the room.
- Ideal combination for roof windows: Eglass + solar protection.
- Snow melting efficiency from the lantern.
- Eliminates condensation in the glazed pool.
- Eliminates condensation and mold on the frames.

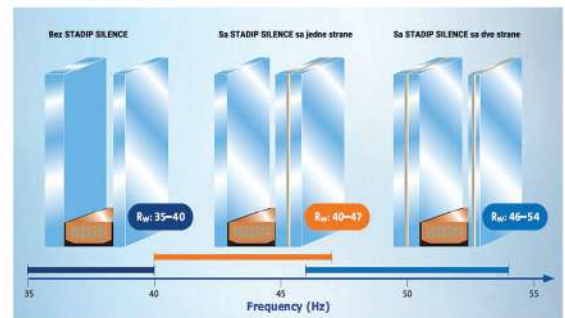


## Stadip Silence noise protection glass

Stadip Silence is laminated glass with Silence foil in the middle and it provides high sound insulation and acoustic comfort in the room. The best effect is if it is used on both glasses.

### ADVANTAGES

- Absorbs sound.
- Sound insulation is improved by 2-3dB.
- Avoids unwanted traffic noise.
- Splinter-proof safety glass.
- A sunscreen film can be applied to the glass.
- Removes UV rays.



## Vision-Lite anti-reflective glass

VISION-LITE allows you to observe the perfect appearance of objects behind the glass because it eliminates the reflection. It is ideal for museum displays and showcases. Show and the contrast of colors is always clear. A showcase without reflection, better attracts customers and improves sales.

### ADVANTAGES

- Eliminates reflections.
- Provides a clear image of the object.
- Made of laminated safety glass.



## Bioclean and Timeless lenses that are difficult to get dirty

BIOCLEAN is facade glass with a film that is very difficult to get dirty due to rain and is used for buildings where it is impossible to clean the facade.

TIMELESS glass is used for shower cubicles and also has a transparent film which prevents water and dirt from sticking on the surface.

The glass is actually cleaning by itself. Water slides down the glass without a trace.

### ADVANTAGES

- Prevents staining of the glass.
- Water is very difficult to catch.
- The effectiveness of BIOCLEAN is constant.
- TIMELES makes it easy to clean the bathroom.
- Great money saving on cleaning.
- Ideal glass for hotels.



## Lite-floor laminated floor glass

Lite-floor flooring is used for interior and exterior applications, most often for public spaces, bridges, tourist attractions and staircases at the staircase. It is possible to provide slip resistance. Glass is laminated from several layers, to ensure the safe passage of people.





## Glass walls

Glass wall and fence systems meet the protection against noise, fire and impact. The systems are certified according to EN standards for pendulum impact of 1 kg, pear impact of 50 kg and line load, sound insulation up to 52 dB, fire resistance up to 60 minutes. The fittings and parts have been tested to 200,000 openings and closures (EN 12,400 - frequency use).

	Glass partitions without visible Profiles	Glass partitions without visible Profiles	Glass partitions with Aluminum visible profiles	Glass partitions with cassette profiles for amplified acoustics	Partitions with panels made of chipboard	Glass fire retardant partitions
Description	Single glass partitions	A single or double glass partitions	A single or double glass partitions	A single or double glass partitions	Full panels	Double fire glass partitions
Partition thickness (mm)	30	75	75	106	75	104
Maximum height (mm)	3800	3300	3000	3750	3000	3000+500
Type of glass	ESG 10, 12 VSG 55.2, 66.2	ESG 10, 12 VSG 55.2, 66.2	VSG 44.2	ESG 6, 8, 12 VSG 33.2, 44.2, 55.2, 66.2	A full range of panels chipboard thickness 12mm	1 side of Pyrobelite (7mm) + 1 side Pyrobite 10 (11mm)
Acoustic characteristics of $R_w$ (dB)	32 - 40	41 - 48	41 - 51	36 - 52	41 - 50	45 - 46
Acoustic characteristics $R_a$ (dB)	30 - 40	39 - 46	39 - 48	33 - 52	39 - 47	43 - 45
Fire resistance	-	-	-	-	-	EI 30 / EI 60
Sections						

### Single-glazed glass partitions without visible profiles

Glass office partitions are designed without visible profiles between the panels and with that they give a clean and minimalist look to the space. The connection between the glass is made thanks to an anodized aluminum or polycarbonate connecting tape. They are suitable for increasing natural lighting in the workspace.



### Double-glazed glass partitions without visible profiles

Glass partitions are designed without visible profiles between either single or double glazing. The connection between the glazing is achieved thanks to an anodized aluminum or polycarbonate strip. They contribute to the space with natural light.



### Glass partitions with aluminum visible profiles

Simple, versatile glass partitions with visible aluminium profiles between the panels are very suitable for furnishing offices. This type of glass partition has the largest amount of acoustic tests to respond to the largest configurations.



### Glass partitions with cassette profiles for amplified acoustics

Simple, versatile partitions with visible aluminium profiles between the panels are very suitable for furnishing offices. These glass partitions are an excellent choice for rooms where high sound insulation is required, such as directors' offices, conference rooms.



### Partitions with chipboard panels

They consist of a 75 mm aluminum frame and the main technical feature of these partitions is the way they are mounted, as well as the appearance that offers complete privacy of the space. They are designed to be seamlessly connected to other partitions in the same series, regardless of the filling.


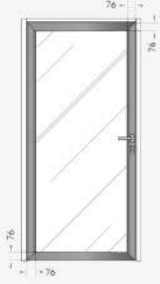
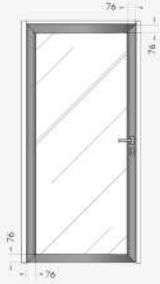



### Glass Fire Partitions Double Glazed

Fire barriers are designed to be installed on-site and provide high acoustic performance. Due to their characteristics, they are often used in areas with high traffic of people.



# Glass doors

System	The appearance of the door	Dimension	Glass	Sound insulation
Frameless glass doors in the ALU jamb		Max. width 1000 mm Max. height 2600mm	ESG 10	R = 24 - 33 dB
Glass doors with ALU frame in the ALU jamb		Max. width 1000 mm Max. height 2950 mm	ESG 6, 8, 10 VSG 33.2, 44.2, 55.2	R = 31- 41 dB
Glass doors with double glazing with ALU frame in the ALU jamb		Max. width 1000 mm Max. height 2960 mm	ESG 6 + ESG 8 VSG 33.2 + VSG 44.2 or a combination of tempered and pamplex glass	R = 41 - 42 dB
Wooden doors in the ALU jamb		Max. width 1000 mm Max. height 2750 mm	1. Plot with extruded <b>chipboard filling</b> 2. Plot with cardboard <b>honeycomb filling</b>  The plot is 4 cm thick. The plot can be painted by ral or veneered.	R = 36 - 37 dB

Glass doors





EN ISO  
10002  
14001



EN standard  
certificate



Thermal insulation  
and energy efficiency



Sound insulation  
and comfort



Fire protection and  
safety



Water vapor  
permeability



## Stone wool

Thanks to its wide range of products, Grual offers stone wool in the areas of thermal insulation, sound insulation and fire protection. With certificates from national and international laboratories, the quality is always at the level of world standards.

	Wool type	Apply	Thickness (mm)	Density (kg/m <sup>3</sup> )	Dimension (mmxmm)
CONSTRUCTION STONE WOOL	1 Stone wool sheets for outdoor use in stone and glass facades with construction	It is used for heat and sound insulation and fire protection on exterior facades.	30-120	50-150	600x1200
	2 Sheets of stone wool for cladding interior walls	It is used for cladding the walls of elevators and staircases, partitions and adjacent walls.	40-120	40-50	600x1200
	3 Stone wool tables for floating floors	Between two layers of concrete, on the floors over open transitions, for the floor coverings of buildings.	30-35	110	600x1200
	4 Stone wool sheets for flat roofs	It is suitable for all wooden and metal roofs, as well as for all types of terraces.	30-100	150	600x1200
	5 Stone wool in rolls for roof cladding	For roof surfaces, as well as for the gaps between the beams.	50-140	40-50	1200x8000 1200x5000 1200x3000
	6 Stone wool tables for indoor and outdoor use	Application in the interior and exterior surfaces of all reinforced concrete elements, for staircases and partition walls as well as interior installations.	40-50	110	1200x2650
INDUSTRIAL STONE WOOL	1 Industrial Stone Wool Boards	They are used for cladding steel structures, industrial plants, process equipment, as well as in the implementation of ready-to-use panels.	40-120	70	600x1200
	2 Stone wool boards for air conditioners	They are used in the lining of air conditioning and ventilation ducts.	40-50	60	600x1200
	3 Industrial stone wool in rolls	Cladding of industrial plants, heating boilers, process equipment, chimneys, heating boilers, steel doors and structures.	40-100	70	1200x8000 1200x5000 1200x3000
	4 Tables and rolls of stone wool for stoves	It is used for cladding electric, industrial and dyeing furnaces.	30-50	32-50	600x1200 1200x8000 1200x5000
	5 Industrial stone wool in wire mesh rolls	Applications in industry, in central heating boilers, process equipment and in ducts and chimneys.	40-100	80-125	600x8000 1200x8000 600x5000 1200x5000 600x3000 1200x3000
	6 Prefabricated pipe	It is used to save heat and protect against fire in highly heated industrial and installation pipes.	25-100	90-100	



# Lighting



Luxon is a company that produces high-quality LED lamps. According to Deloitte Technology Fast 50 ranking for 2018. year. Luxon was mentioned as the fastest growing lighting manufacturer. Their offer focuses on industry, commercial facilities and outdoor lighting. As pioneers in the industry, they implement their own project support for customers and optimization of energy consumption, which enables their clients to realize greater advantages and savings, through the application of Luxon lighting on their projects.

## Industrial lighting



## Office lighting



## Commercial lighting



## Outdoor lighting



### Legend:

-  Office
-  School
-  Business building
-  Public facility
-  Hotel
-  Storage hall
-  Sports Hall
-  Trg
-  The road
-  Agricultural facility
-  Hospital
-  Industrial hall
-  Clean industry



### Advantages:

- Energy efficiency with 75% energy savings.
- High quality with branded components.
- Ceramic LED is used in high power lamps.
- Longer service life with resistance to aggressive environments.
- Low heat emission.
- Quick and easy installation.
- High quality of light.
- Special glasses for better distribution of light.
- Improved shock and vibration resistance.
- Warranty 5 years or up to 100,000 hours.
- Additional solutions for consumption optimization.
- Electrical components - EMC standard (power factor 0.95).



# Fire-resistant doors and smoke-resistant doors T30, T60, T90, T120 and T180



## Fire-resistant single-leaf doors

Fire protection is from T30-1 to T180-1.  
The leaf is 40 mm thick with the possibility of left and right opening.  
The door frame has an APTK rubber seal, grooved on four sides.  
The lock and hinges are fireproof.  
The door leaf and frame are specially protected, galvanized and plasticized.  
It is possible to choose colors or wood decor.  
Fire protection can be smoke protection and sound insulation.



## Fire-resistant double elevator doors

Fire protection is from T30-2 to T90-2.  
The door leaf is specially protected, galvanized and plasticized.  
In addition to fire protection, smoke protection can be combined and sound insulation function of the door.



## Fire-resistant glazed aluminum doors

Fire-resistant aluminum door T30-2, glazing system.  
Fire-resistant steel door T30, glazing system.

Director  
Mobile: 063 20 88 82  
Mail: [aleksandar.grujic@grual.rs](mailto:aleksandar.grujic@grual.rs)

Sales, support, and project monitoring engineers  
Mobile: 064 14 17 290  
Mail: [prodaja@grual.rs](mailto:prodaja@grual.rs)  
[podrska@grual.rs](mailto:podrska@grual.rs)  
[sava.grujic@grual.rs](mailto:sava.grujic@grual.rs)

Grual d.o.o.  
Bulevar Zorana Đinđića 68, 11 070 Beograd  
[www.grual.rs](http://www.grual.rs)