

precision processing individual attitude 20 years experience precision processing

**20 YEARS EXPERIENCE** precision processing

**INDIVIDUAL ATTITUDE**

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**PRECISION PROCESSING** individual attitude 20 years experience





# ABOUT US

The company TR Lezecké stěny (TR Climbing Walls) was established in 1996 as one of first companies of this type in the Czech Republic and, in the course of time, it became the most important manufacturer of climbing walls in the country. The company was transformed to TR-walls, s. r.o. in 2008.

We offer not only our 20-year experience in designing and constructing climbing walls, but also our experience acquired during their operation. We participate in the operation of climbing centres Tarnogaj Wrocław, built in 2011, and BigWall Praha – the largest climbing centre in Central Europe, put in operation in 2013. Thanks to this, we are also familiarized with climbing walls from the viewpoint of users and take advantage of these our experience in the implementation of new projects.

Our team of specialists, constituted with having in mind long-term perspectives, provides as high quality of our products as possible. Our group of designers includes active climbers, the building structures are designed by authorized structural engineers, a great proportion of our staff members work in our company from its very beginning, and of course, last but not least, we have a group of experienced assembly workers comprising qualified carpenters and joiners.

We ever continue working in the development of new materials and processing technologies. By way of example, we can mention a system of our laminate panels TR-compact, heavy-duty surface of plywood plates TR-friction II, and many other enhancements. We always put our great emphasize on perfect treatment of all the wall details. The CNC technology is considerably helpful to us in these attempts. The safety of our structures, resulting from strict adhering to relevant standards, particularly EN 12572, is taken for granted.

In spite of the fact that over the period of our activities, we have built thousands of m2 climbing walls, we accept each new action as a challenge and always try to offer our customers with individualized solutions.



**Tomáš Rakovič**  
*company owner*



## BIG WALL Prague, CZ



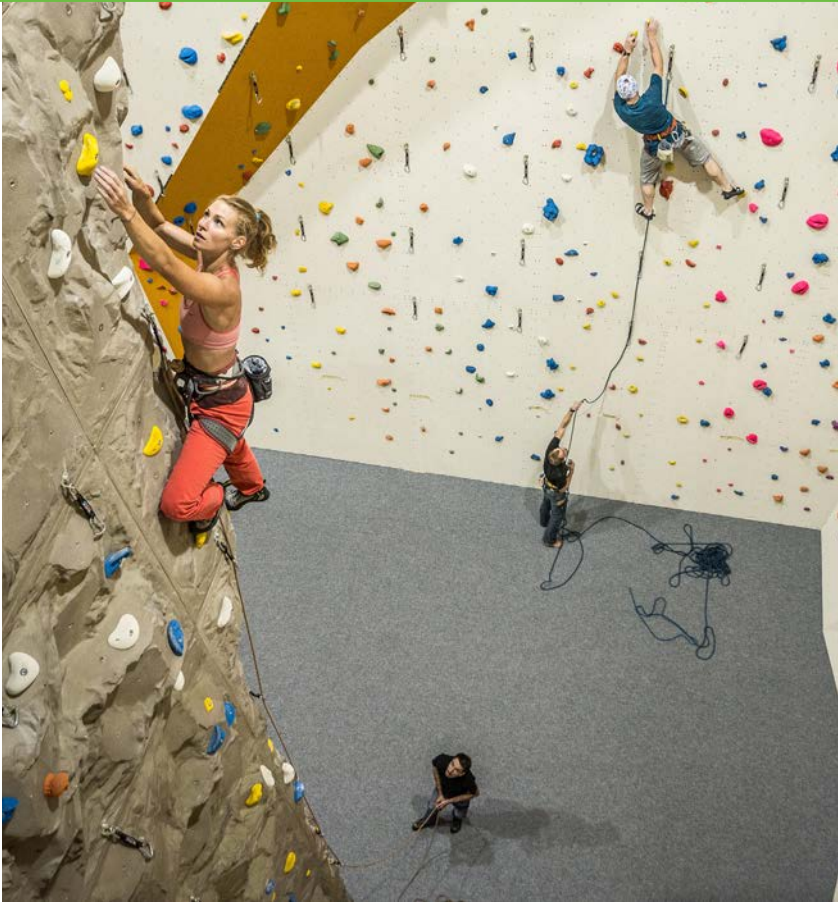
The climbing centre is built in original production hall the former ČKD. During the construction we used our long-standing experiences with building and running climbing walls. We built it in 3 levels, which provide an opened "airspace". The dominant of the space constitute of two massive pillars with an overhang over 10 m. They end under the ceiling in the high of 20 m. Beside the overhang the wall offers many others interesting vertical or tip tilted profiles, which are completed with a laminated massive out of GKF panels and an imitation of a real stalagmite from the same material. There is also a possibility of chimney climbing or climbing in clefts. The boulder wall is placed in the second level right over the reception. For the top rope and the climbing courses there is a "gallery" with the high of 12 m.

### YEAR 2013

Total surface:	
Climbing wall:	3000 m <sup>2</sup>
Boulder:	300 m <sup>2</sup>
Height:	20 m







It is another reconstruction of formal producing hall into climbing centre. During the designing we had to deal with a tight long hall. We divided the space with some pillars, which created lovely rooms. The view through the hall remind on view into canyon. On this wall you will find not only a big amount of sloping and vertical profiles, but also qualitative sport overhanging profiles with the overhanging of 8 m.

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**YEAR 2014**

Total surface:	1 450 m <sup>2</sup>
Height:	16 m
Max. Overhanging:	8 m





**DAV KLETTERZENTRUM** Dresden, DE

The indoor climbing wall was built in the new hall DAV Dresden in the year 2014. In the two levels you can find sloping profiles, different kind of clefts, chimneys, big amount of vertical profiles, sport overhanging profiles as well as speed climbing walls.

**YEAR 2014**

Total surface: 1 900 m<sup>2</sup>

Height: 16 m





**TARNOGAJ** Vratislav, PL

On the 1100 m<sup>2</sup> the customer will find a broad offer of climbing profiles – from the vertical walls for beginner to training overhangs for performance-climbers. In the middle of the hall is located a “sandstone tower” out from laminated panels, which has delivered our company. In the higher floor is placed a boulder wall of the total surface of 130 m<sup>2</sup>.

**YEAR 2011**

Total surface:

1 100 m<sup>2</sup>

Height:

14 m

**Gliwice, PL**

In the spring 2014 we were chosen as deliverers of climbing and boulder walls for the new sport centre in Gliwice, Poland. The result is smaller, but very comfortable climbing centre, which completes other sport activities. During the construction we used the CNC technology – board formation. The same year in the autumn we added there a climbing wall for the children corner.

**YEAR 2014**

Total surface:

620 m<sup>2</sup>

Height:

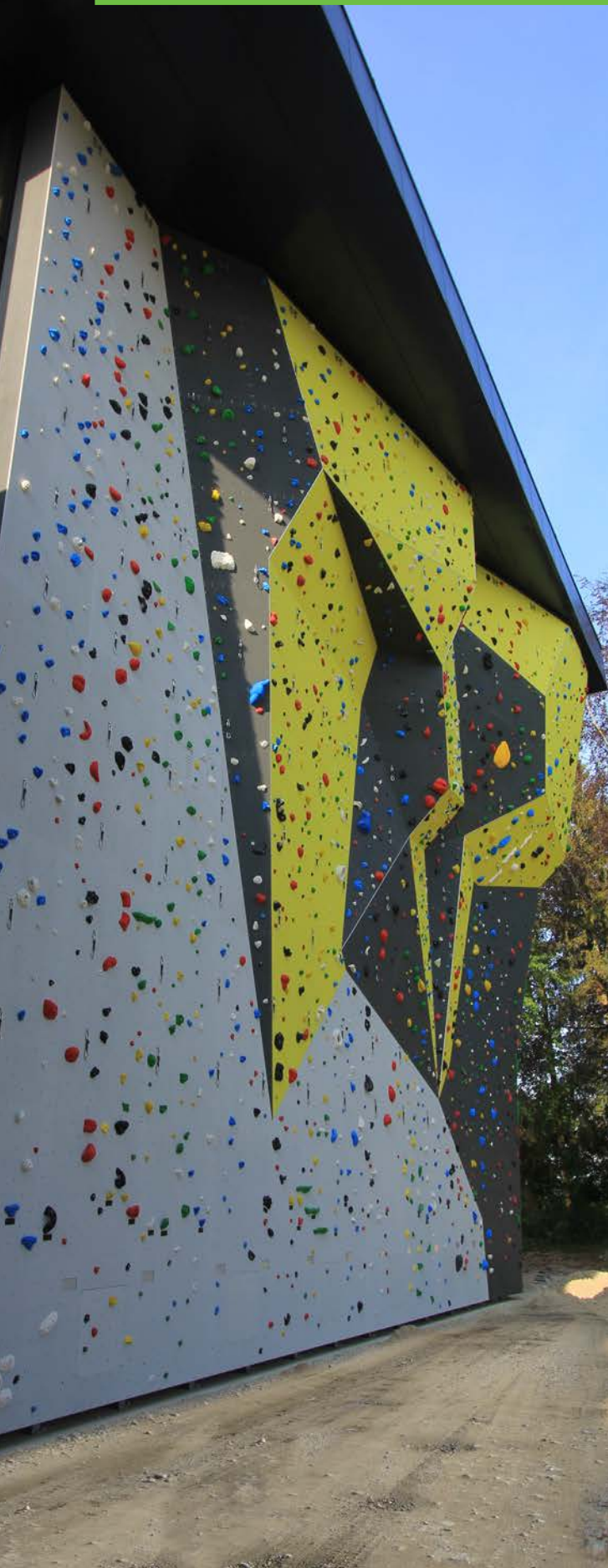
11,5 m

Max. Overhanging:

3 m





**DAV KLETTERZENTRUM** Waldkraiburg, DE

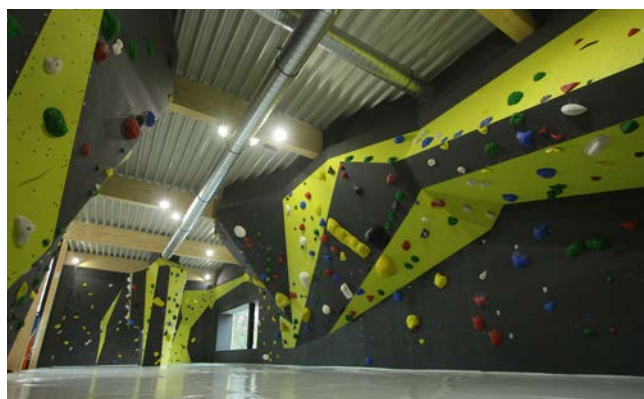
It is a modern climbing centre build in 2015. Because we had enough time for the project preparation and for the building itself, we could design optimal layout of walls. The result is a beautiful climbing are, which satisfy the demands of climbers of each performance. Upon arrival to the hall you will see big outdoor climbing wall, then you can find here an inside climbing wall and inside boulder wall. If you will go to climb this wall, you will for sure recognize the quality of the materials and the precious processing. The deliver included the holds and the construction of ways.

**YEAR 2015**

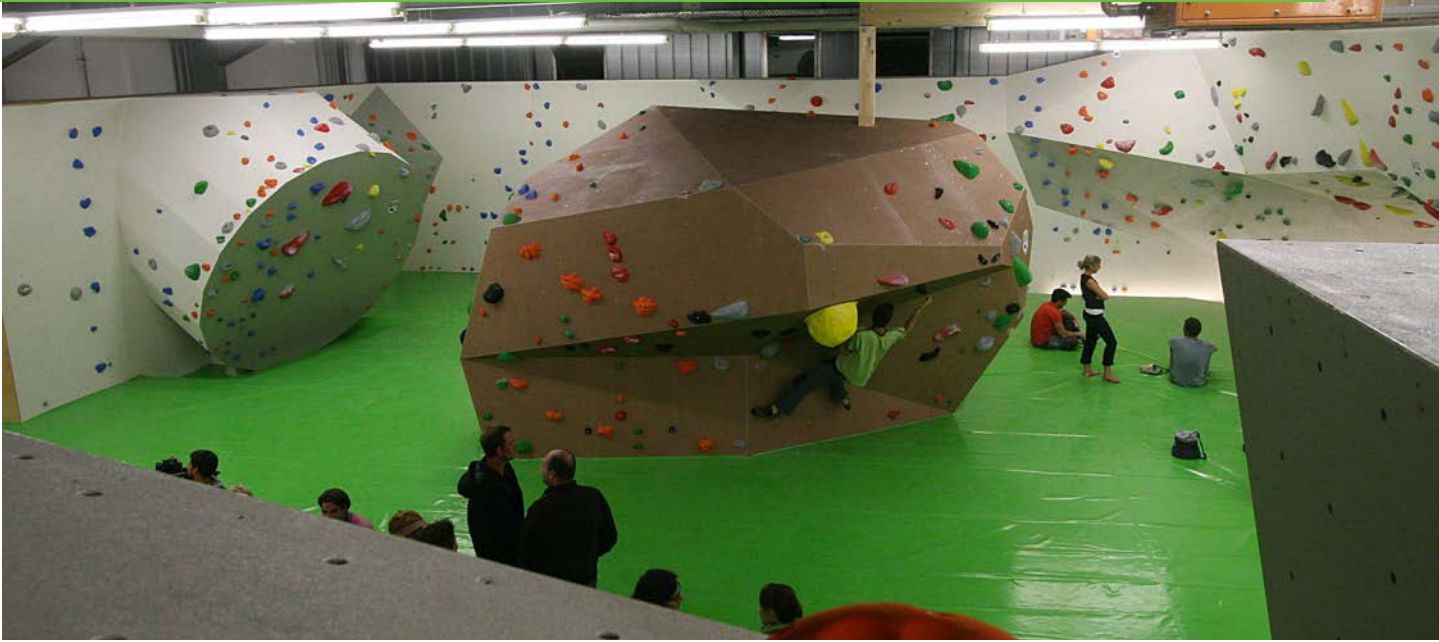
Indoor surface: 1 000 m<sup>2</sup>

Outdoor surface: 550 m<sup>2</sup>

Boulder: 340 m<sup>2</sup>





**BLOCKHELDEN** Erlangen, DE

The boulder centre is placed in the area of formal car service in Erlangen. The disposition and forms were developed after few months of the cooperation with the investor. The construction was divided in 3 different stages according to each of the "halls". The sections workshop and showroom offer all of the forms including favored "topout" for the whole public.

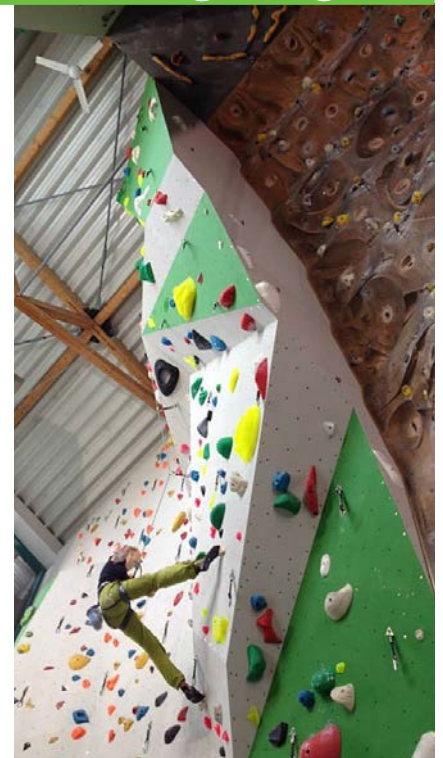
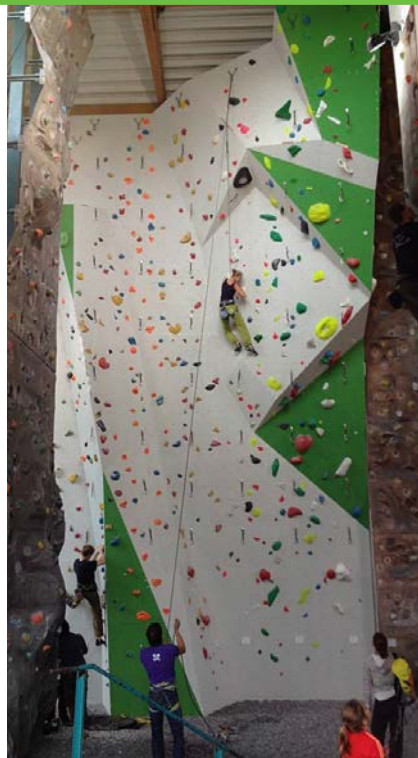
The section Bigroof (10 m long with the inclination 35 degrees) is meant for the experts. The children's corner with a cave and net is also included.

**YEAR 2012-2013****Total surface:**930 m<sup>2</sup>**Height:**

4 m

**DAV KLETTERZENTRUM** Augsburg, DE

It was a reconstruction of an inner plywood wall. With respect to the surrounding we designed a new shape, which copy the original range of the wall. Our work included the proposal of a new shape, removal of the old wall and material, production and assembly of the new wall and TUV certification.

**YEAR 2013****Total surface:**160 m<sup>2</sup>**Height:**

16 m



## WORLD CUP 2009 BRNO, CZ



This is a temporary wall build especially for the world cup in sport climbing organized in Brno 2009. For the construction we used scaffolding, the sheathing was made from wooden sandblasted panels in the upper part and laminated panels in the overhang.

### YEAR 2009

Total surface:	160 m <sup>2</sup>
Height:	16 m

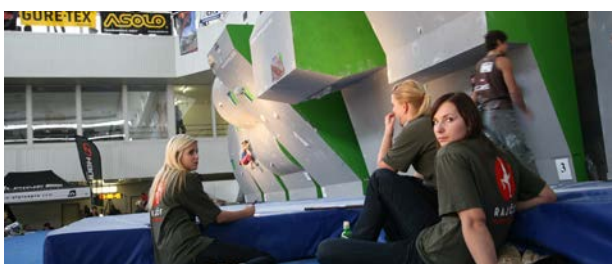


## WORLD CUP BRNO 2007 Brno, CZ

We designed and built the wall especially for the world cup in bouldering. The wall consists of eight independent competitive profiles and four training profiles, which were in isolation. We find here vertical and partially overhanging profiles or big overhangs.

### YEAR 2007

Total surface:	180 m <sup>2</sup>
Height:	4,5 m







Beside the classical climbing walls we have also build climbing walls for the speed climbing.

The speed climbing walls: the wall suits to all parameters, which are prescribed for this kind of sport. Together with the wall we can also deliver standardized holds for speed climbing or timekeeping.

Our company started with the construction of the climbing walls for schools and gym and now it still belongs to our significant actions. Usually it is about smaller walls, which are necessary to design them so, that they can satisfy a wide spectrum of climbers. From the small children to the adult. We always try to design them according to the individual request of our customer.





# WALLS FOR THE PLAYGROUND AND PARK

In our offer you will find more than 50 models of laminated children climbing walls, divided in to 3 series- TR-Block, TR-Walls, TR-Tower. They are meant for the public space as well as for the kindergarten. All models are certificated according to EN 1176-1:2009.



TR compact panels, TOWER series



TR compact panels, BLOCK series



Freeform laminate



CNC milled plywood





**OLYMPIA** Brno, CZ

The request for this project was to build a unique building, representative for the investor, which will fulfill the standards for sport but also for recreational climbing. We chose for it the technology of steel construction and concrete spraying, because of outdoor placing and because we were asked to portray a "artificial rock". Our company went out of our experiences with a similar project implemented in 2005 in Prague Strašnice.

**YEAR 2009**

Total surface: 1 600 m<sup>2</sup>  
Height: 18 m

**GFK tower** Sokolov, CZ

The climbing tower is situated in the area of DDM (youth centre) Sokol. The whole surface of the tower is made by GTF panels of own production including the roofing. The support construction is prefabricated, hot dip galvanizing.

**YEAR 2014**

Total surface: 130 m<sup>2</sup>  
Height: 10 m





## Simulators, walls for fire sport, polygons and rope sport centers



Beside building the climbing walls, our company builds special facilities for training of movement at heights. Already in 1998, we produced and installed 10 simulators Jakub (James) for AČR. This is a variable simulator, whose bearing structure is made of scaffolding. On the supporting structure are installed various modules that allow to practice movement in the heights in different environments. A plus is that everything can be easily moved. We produce it in the various modifications till today. After successful delivery for AČR, followed similar orders in the Slovak Republic, France, Albania and Egypt.

We also realized several polygons for teaching high-rise work, fire walls and rope sport centers.







1. Discussion about basic clients vision and focusing the area
2. Making a 3D model of the wall
3. Preparation of indicative price calculation
4. Implementation documentation and static evaluation
5. Prefabrication in OUR production areas
6. Assembly
7. Handover documentation: drawings of the actual state, inspection reports, certificates, tutorials etc.
8. The possibility of building roads
9. The possibility of regular annual inspections in accordance with EN 12572



## The materials we use

**Sheathing** –all sheathings we use are certify compliance with EN 12572-1 and EN 12572-2

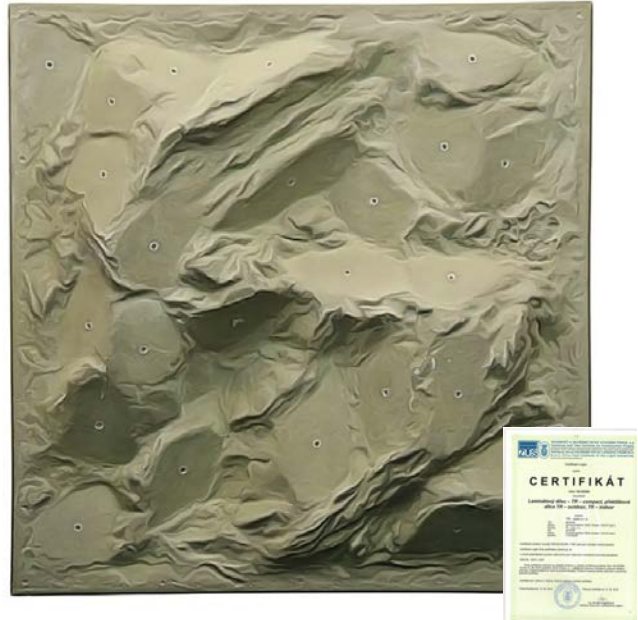


### PLYWOOD MULTIPLEX birch 18 mm

We use only high-quality water-resistant birch plywood multiplex.



ADVANTAGE	DISADVANTAGE
<ul style="list-style-type: none"> <li>• good price</li> <li>• enough of straight surface for holds</li> <li>• there is a possibility to install the structure</li> </ul>	<ul style="list-style-type: none"> <li>• shorter lifespan by install not roofed outdoor walls</li> </ul>



### LAMINATED PANELS TR compact

The TR compact System is a unique solution for sheathing of climbing walls. The main elements of this system are large formatted panels with corner and transitional parts.

The TR compact panels are made of polyester composite. The unique trait of the surface is achieved thanks the upper gelcoat layer. Used gelcoat has excellent abrasive effect and is resistant to atmospheric conditions.

The whole TR compact System is made to balance the esthetical trait and the functionality.

ADVANTAGE	DISADVANTAGE
<ul style="list-style-type: none"> <li>• a big amount of holes in the relief</li> <li>• worked out form and straight areas under the holes</li> <li>• is really good for the outdoor installation – long life</li> <li>• indestructible TR gelcoat surface</li> <li>• a big amount of holes</li> </ul>	<ul style="list-style-type: none"> <li>• higher price</li> <li>• lower amount of holes for holds and limited size of straight areas</li> </ul>



## HANDMADE

We use the manual work only for easier wall forms and for different reparations, where is no possibility to localize exactly the parts.

## CNC TECHNOLOGY

This technology is suitable for demanding forms. Big advantage is an exactly placing of the parts without cement using. We have the possibility of production in ours production space, so we can minimize the montage time by our client. It allows the use of TR friction II.

**Board surface** is one of the most important factors, which influence the quality of the wall. That's why we put emphasis on the quality. Both of below standing surfaces we can deliver in various roughnesses and colors.

## TR FRICTION I

TR friction I is time-proved, classic surface, which we already used on hundreds of our walls. The basic for his surface is the epoxy paint, on which is with the pressure applied layer of silica sand. The final paint constitute of acrylate facade paint. Advantage of this surface is a price – performance ratio and the ability to apply it also on the vertical areas. That's why TR friction I is suitable for the renewal of the paint on the old climbing walls as well.

ADVANTAGE	DISADVANTAGE
<ul style="list-style-type: none"> <li>• good price</li> <li>• possibility of the application on the vertical surface – easy repairable</li> <li>• ideal for less burden walls</li> <li>• perfect friction</li> </ul>	<ul style="list-style-type: none"> <li>• unsuitable for the outdoor walls</li> <li>• we don't recommend it on the commercial walls, where we suppose a high burden</li> <li>• lower resistant to damages</li> <li>• lower resistant to soil from climbing shoes</li> </ul>



## TR FRICTION II (profi)

It is a new generation of surfaces for climbing walls and boulder walls. We invented it and first used in 2012. Since then we use it for big climbing centers, where we assume a higher burden.

ADVANTAGE	DISADVANTAGE
<ul style="list-style-type: none"> <li>• high resistance toward damages – longer lifetime</li> <li>• user comfortable surface – it minimize danger to graze during climbing</li> <li>• less used climbing shoes</li> <li>• high resistant toward soil from the climbing shoes</li> <li>• suitable for the outdoor walls</li> </ul>	<ul style="list-style-type: none"> <li>• higher price</li> <li>• the application is only horizontal position possible – inappropriate for reconstruction of old walls</li> </ul>



## Nuts for fixing of holds

**Nuts for fixing of holds** – all nuts we use are certify compliance with EN 12572-1 and EN 12572-2

### THE TYPICAL TEE NUTS (GALVANIC ZINC)



#### ADVANTAGES

- perfect price-performance ratio

#### DISADVANTAGE

- in case of excessive tightening, the tee nut could be pressed in the plywood
- in case of screwing the tee nut wrong, the tee nut could be pressed out of the plywood
- lower lifetime by using it in outdoor
- we don't recommend it to the places, where there is no access behind the wall

### PLATES FOR FASTENING A SCREW



#### ADVANTAGES

- resistant against not professional montage
- it is suitable for places, where is no access behind the wall

#### DISADVANTAGE

- lower lifetime in Outdoor

### STAINLESS PLATES WITH STAINLESS HEAVY HEX



#### ADVANTAGES

- suitable for using it in Outdoor
- extremely resistant against not professional montage
- it is suitable for places, where is no access behind the wall

#### DISADVANTAGE

- high price



## WOOD PRISM

(without impregnation – indoor, with impregnation – outdoor)

ADVANTAGES	DISADVANTAGE
<ul style="list-style-type: none"> <li>• better price</li> <li>• eco-friendly material</li> <li>• it is damping the noises behind the wall</li> </ul>	<ul style="list-style-type: none"> <li>• it's not suitable for structurally demanding constructions (overhang etc.)</li> <li>• not suitable for using it outdoor without roof</li> </ul>



## STEEL CONSTRUCTION

(painted – indoor or hot-dip galvanized – outdoor)

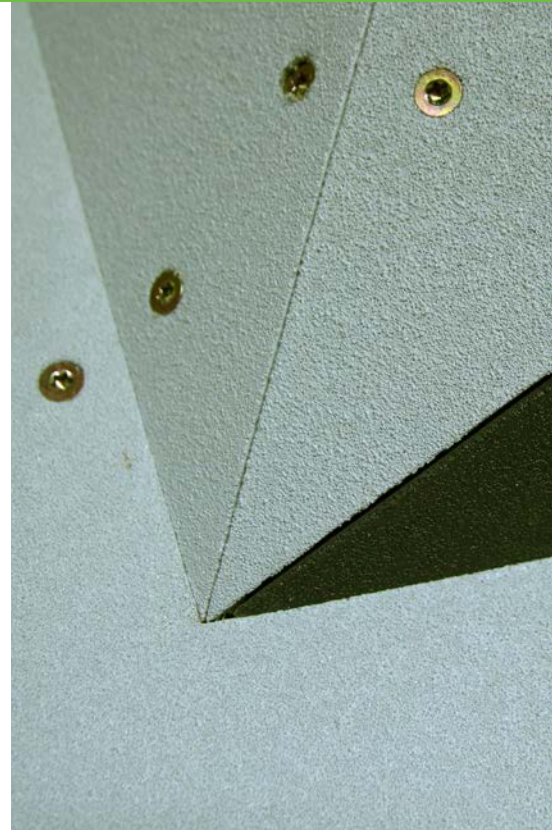
ADVANTAGES	DISADVANTAGE
<ul style="list-style-type: none"> <li>• perfect for using it in outdoor (hot-dip galvanized)</li> <li>• suitable for structurally demanding constructions</li> </ul>	<ul style="list-style-type: none"> <li>• higher price</li> <li>• compared to wood construction higher noisiness</li> <li>• demanding assembly</li> </ul>



## REALIZATION

### Fitting of boards

During building our walls we take care very much about precision processing of each detail. The contact of each board is the most important detail from all. Thanks to CNC formatting and thanks of our experienced fitter, we can fit the boards so well together that there isn't necessary to use the sealing joints between boards.

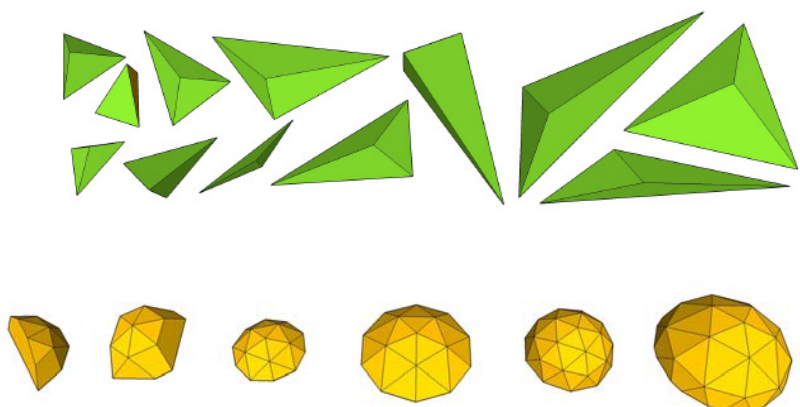
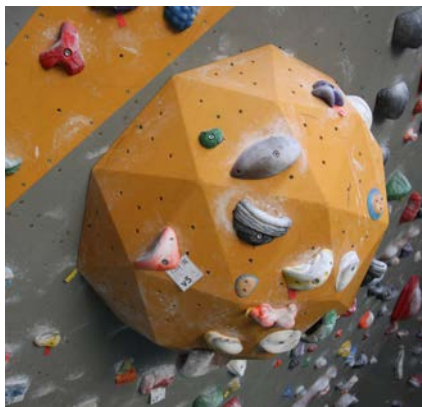


## REALIZATION

### Structure

Our structure is made from plywood boards, which enable the install of small holes with help of screw. Normally is the structure fitted with screw nuts for fastening of holds and painted with TR friction II surface.

- With an easy triangular structure you can diversify each climbing wall or boulder wall. We deliver this structure in 3 different sizes.
- The complicated half round structure is usually used for the boulder walls, but it can find the use by bigger climbing wall also (for example there, where it is necessary to divide the wall in easier forms). This structure is perfect for those, who want to offer their customers constantly something new.





Because even the most durable surface can't stand hits of steel carabiners or friction from the rope, we have developed several variants of walls protection. The purpose of these amendments is to keep the wall as long as possible without the need for repairs.



**Edge protection strip steel strips** – economic and functional variant. It is not suitable for outdoor walls.



**Edge protection strip stainless bars** – the stainless steel rails perfectly protect your wall without the need for any maintenance – suitable as well for outdoor walls.



**Edge protection strips stainless steel half round profile** – luxury variant of the protection wall. Beautiful detail, emphasizing the perfect treatment for our wall. Of course, suitable for outdoor wall too.



**Shock absorber carabiners** – while chattering quickdraws and mainly when faced heavy steel ropes carabiners into the casing wall. This not only causes unpleasant noise on the wall, but also to damage the wall surface. Therefore, we have developed our unique shock absorber carabiners. The base of this protection wall is a frame equipped with TR-friction II. surface. Of course, you can choose your color. The frame is inserted damping rubber insert. To fix it on the wall is very simple. Only with screws.



**Floorboards strips** – did you recognize that because of cleaning the floor, the wall down at the floor gets dirty? Therefore, we offer possibility of lacing walls. We produce strips of waterproof plywood. These strips are provided with a glossy coating and it can have the same color shade as the wall. The strips have a height of 5 cm and at its upper edge are provided with a chamfer.

We know that holds quality and diversity is essential for the successful operation of your climbing wall. That's why we offer a wide offer of holds in various design and we still try to invent new forms. For your own safety the holds are furnished with an Antiexplosion system. In the hold is incorporated a steel spring, which in case of breakage defend the fragment to fall on the ground.



Our favorite holds belong to the Organic series. In this family you can find around 200 Holds in different shape and design. Apart from the fact that lines built from holds in one design look better, it helps the climbers during the orientation.



Our specialty is the holds from Natural family, which are the faithful copy of the real rock holds.



Between our new belongs the A family of holds. They are characterized by exact processing, safety and interesting forms.

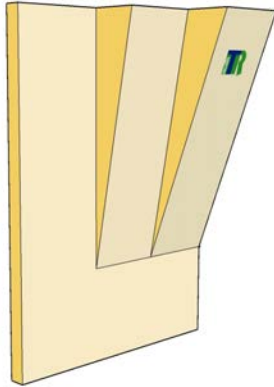


Labeling of climbing routes is a problem, which must solve the majority of operators in different way with different labels. The labels are easily destroyed and unsightly. Therefore we come up with the original solution. We have developed a hold with a hole in which is inserted a card with directions. The card is covered by a polycarbonate plexiglass 3 mm thick. The replacement of this card is very simple. It is enough to dismount the hold and remove from the back to add a new description. We produce the starting holds in a wide range of shades. So they can be a part of a single color-coded climbing routes.

If our offer doesn't satisfy you, we will be happy to deliver you holds from other respected producer, for example: AIX, Samsara, Lapis, Bleustone etc.

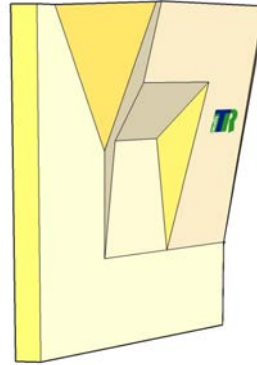


## BASIC



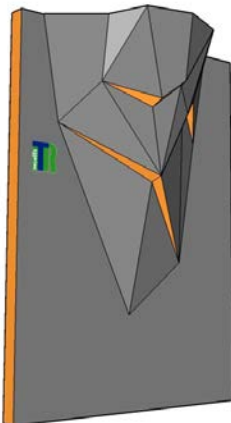
- 3D Model
- The project documentation with all statistic
- Support construction – building lumber
- Plywood birch multiplex 18 mm
- Tee nuts 16/m<sup>2</sup>
- TR-friction I surface
- The link between boards is filled with putty
- Self-colored – gray or beige (for multicolor variation you have to pay extra money)
- Holds TR – wall 4/m<sup>2</sup>
- One initial revision

## ECONOMIC



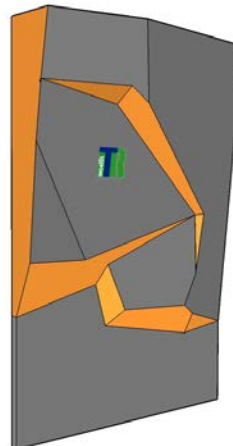
- 3D Model
- The project documentation with all statistic
- 3D profile – round 30%
- Support construction – building lumber
- Plywood birch multiplex 18 mm
- Tee nuts 28/m<sup>2</sup>
- TR-friction I surface
- The link between boards is filled with putty
- Self-colored – gray or beige (for multicolor variation you have to pay extra money)
- Holds TR – wall 5/m<sup>2</sup>
- One initial revision

## PROFI



- 3D Model
- The project documentation with all statistic
- 3D profile – round 50%
- Steel or wood (from KVH) construction
- Plywood birch multiplex 18 mm – format by CNC technologies
- The line between board are exact without using a putty
- Screw nuts 28/m<sup>2</sup>
- TR-friction II surface
- Self-colored – gray or beige (for multicolor variation you have to pay extra money)
- Edge protection (in important places) with boards (galvanizing) 20 mm
- Combination of holds TR-walls and Samsara 7/m<sup>2</sup>
- One initial revision

## TOPTECH



- 3D Model
- The project documentation with all statistic
- 3D profile – round 70–100%
- Steel or wood (from KVH) construction
- Plywood birch multiplex 18 mm – format by CNC technologies
- Screw nuts 28/m<sup>2</sup>
- TR-friction II surface
- Self-colored – gray or beige (for multicolor variation you have to pay extra money)
- Protection from edges from all half round profiles – 20 mm stainless steel
- The walls are ended with top handle
- Combination of holds TR- walls, AIX, Samsara, Lapis 7/m<sup>2</sup>
- Triangular plywood structure TR-wall – 3 pieces/100 m<sup>2</sup>
- Ways are secured with quickdraw and maillon + steel carabiner clip
- 2 ways are build
- One initial revision

## TR COMPACT INDOOR



- 3D Model
- The project documentation with all statistic
- Support construction: building lumber and steel rods
- Laminated panels TR compact
- The line between board are exact without using a putty
- Galvanizing nuts 20/m<sup>2</sup>
- Tr-compact gelcoat surface
- Color – light gray
- Holds TR –walls 4 /m<sup>2</sup>
- Ways are secured with quickdraw and maillon + steel carabiner clip
- Chains Fixe including 2 pieces of carabiner clip
- 2 ways are build
- One initial revision

## TR COMPACT OUTDOOR



- 3D Model
- The project documentation with all statistic
- Support construction: galvanized steel
- Laminated panels TR compact
- The line between board are exact without using a putty
- Stainless nuts 20/m<sup>2</sup>
- TR-compact gelcoat surface
- Color: light gray
- Holds TR- walls 4/m<sup>2</sup>
- Ways are secured with quickdraw and maillon + steel carabiner clip
- Chains Fixe including 2 pieces of carabiner clip
- 2 ways are build
- One initial revision



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