







Checked Quality Only

Complex of materials for industrial and commercial buildings

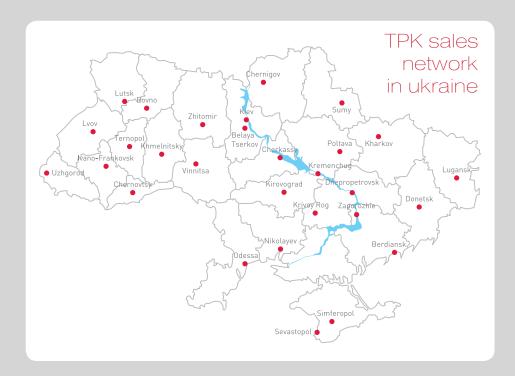
TPK Company is the biggest Ukrainian manufacturer of a complex of building materials for roofs and facades.

We are always nearby in order to make the construction easier, faster and more profitable for our clients.

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Oleg Goncharuk President of TPK Company

#### About the TPK company





Today TPK is leader on Ukrainian market of modern building materials for roofs and facades.

We were among the first ones who got Ukrainian users acquainted with metal tile and roofing profile, and within 20 years we made a long way from small trading company to the biggest national manufacturer. The company has under its belt dozens of thousands of projects all over Ukraine and beyond its boards. More than 10 thousand clients make their choice in favour of TPK products.

We are proud that our clients regard our company as reliable and responsible partner that is easy, fast and profitable to build with. TPK products are made at two modern plants in Kiev and Lvov regions.

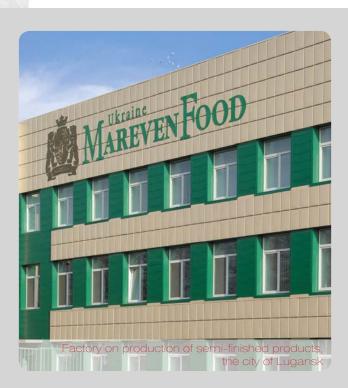
TPK plants are equipped with the equipment of the best European suppliers. 23 production lines allow to produce more than 20 million square metres of different products during a year, namely metal tiles, roof and facades profiles, and loadbearing profiles, facade panels and cassette, roof accessories, sandwich panels.

TPK-profile is the first Ukrainian manufacturer of metal tile and roofing profiles, having certified system of quality management in accordance with the standard ISO 9001.









TPK sales network includes 32 branches in all regions of Ukraine, in Kazakhstan and Moldova.

Managers, engineers and logisticians of TPK branches help our clients in all regions to get full complex of maintenance service that includes: engineer consultations and calculations, organization of production upon the request, completing with related products, and timely receipt of the order at the warehouse of the branch or at the site, warranty service.

Network of Authorized Partners, containing 200 companies, allows to bring our production to thousands of private clients all over Ukraine. TPK offers to its clients all-in-one

solution of enclosure structures of roofs, walls and facades on the basis of modern building technologies.

For residential and public building we offer the solution of slopping roofs with roof coating of metal tile and roof profiles. For industrial and commercial construction we offer different types of roof and wall «cakes», intermediate floors, suspended facades.

The usage of metal sheeting profile with protective coating, produced at the TPK plants, as the main construction element unifies all these solutions.

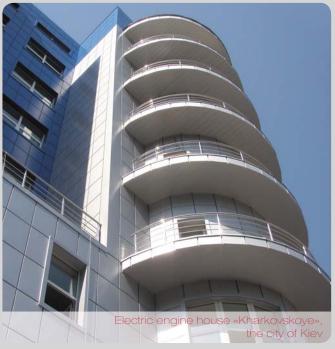
Besides the sheeting profiles, the range of products includes all related products: thermal, water and

vapour seal materials, translucent constructions, drainback systems, and fittings.

Engineer competence of TPK employees allow to choose correctly and apply modern building materials, and the production upon the request and developed logistics allow to obtain timely and with minimal expenses all necessary set of materials.

# Enclosure structures of buildings of industrial and commercial destination





Modern business advances high demands to the construction of industrial and commercial buildings:

- reduction in consumption of materials:
- minimization of commissioning term:
- use of the most cost-effective materials;
- reliability of constructions exploitation.

TPK Company offers effective solutions for enclosure structures

of walls, coatings and floors of industrial and commercial buildings on the basis of application of shaped steel sheets with protective coating coming with related materials:

- o roof and facade profiles,
- load-bearing profiles,
- internal wall cassettes,
- o facade panels and cassette,
- sandwich-panels,
- beams of secondary load bearingconstruction,
- thermal and sound insulating materials.
- vapour seal and waterproof membranes,
- o drainback systems,
- flat skylights,
- o roof membranes of PVC and TPP,

fitting and constitutive elements.

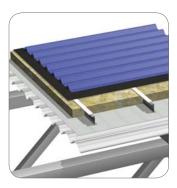
Generic solutions for enclosure structures offered by TPK Company are based on the experience of our materials use in thousands of building projects during 20 years not only all over Ukraine, but also beyond its borders.

Engineer skills of sales and technical personnel of TPK branches in every region allow to adapt in the most effective way the generic solutions to the conditions of your building project, as well as apply our materials at all the stages, starting from designing till the constructions assembly.

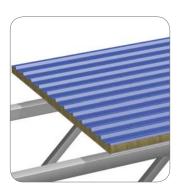
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## Generic solutions for enclosure structures:

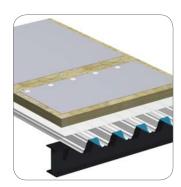
Coating



Slopping roof



Roof sandwich-panel



Flat roof

Walls



Composing sandwich



Wall sandwich-panel



Wall with IWC

Ventilated facades



Facade cassettes



Concertto



Facade panels

Floors



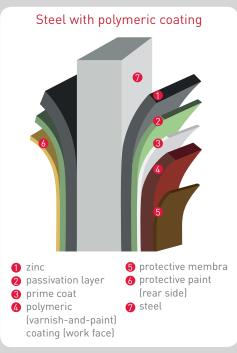
With reinforcing profile



With additional reinforcement

## Thin sheet steel with coating





Due to its strength, plasticity, endurance, and cost-effectiveness it is ideal material for modern building. In order to prevent rapid corrosion, the sheet steel is covered with a layer of more active nonferrous metals or their allegations. Such coating provides physical protection of steel from contact with water and air as well as electrochemical protection in places of failure, thus more active metal is the first that undergoes the oxidation reaction, and created solid oxides covers shears and scratches on the surface of the material.

The endurance of the products depends on type of the protective coating. The zinc coating is the best solution for most of fields of application. For more demanding exploitation conditions allegation of zinc with other nonferrous metals is used, namely with aluminium, magnesium, and silicon.

For additional protection and aesthetic attractiveness the thin sheet steel can have also ornamental polymeric coating.

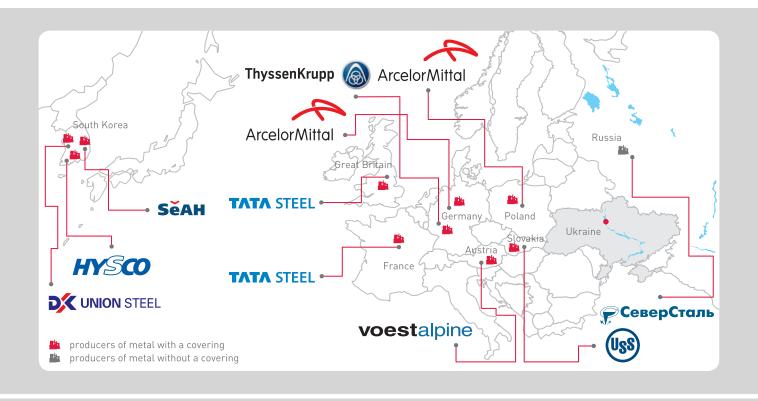
Ornamental coatings are mainly put on using the methods of painting, sometimes by lamination, i.e. attaching membrane. The quality of building materials from the thin sheet steel depends on correctness of metal specification choice (thickness and mark of the steel, type and sickness of the coatings) as well as of quality of metal production.

The steel of the best quality is made by big metallurgical complexes with integrated production process, modern technologies and considerable experience of work.

For a long time the permanent suppliers of thin sheet steel with coating for TPK are leading metallurgical complexes of Germany, Austria, France, Netherlands, Slovakia, and South Korea.



#### Steel as profiling material



#### Offered types of coatings:

Zinc is the most spread type of protective coating, suitable for the most of fields of application. Its best thickness for external use is 275 g/m2, but not less than 200 g/m2.

Kirk-site is a coating that consists of almost equal parts of aluminium and zinc, with silicon on the side. It has more considerable corrosive resistance than zinc, including acid environments. It has silver gloss that does not get pale in course of time. The thickness of the coating is 120, 150, 185 g/m².

Zinc magnesium if a modern coating that contains apart from zinc small part of magnesium and aluminum. It differs by its plasticity and high corrosive resistance, including chloride and ammoniac environment, during the use at seacoast and agricultural objects. The thickness is from 90 to  $250 \text{ g/m}^2$ .

Standard polyester is a decorative coating based on polyether paint, and has glace surface. It is suitable for internal and external use. Standard thickness is  $25 \, \mu m$ .

Eggshell polyester is a kind of usual polyester, modified by Teflon. It has mat surface and strong structure statement. Standard thickness is  $30-35 \, \mu m$ .

PVDF (polyvinyliden fluoride) is a coating on the basis of PVDF gum and acrylic gum. Standard thickness is 25-35 µm. It has increased wearing capacity and corrosion resistance.

Food safe is a coating in form of a membrane on the basis of PVC (polyvinylchloride) with the thickness of 110-120  $\mu$ m. It is intended for use in food industry, safe for contact with food, resistant to mould, cleansers and humidity; it is easy to clean, and it is endurable.

#### Sandwich-panels

Sandwich-panels

Sandwich-panels are universal products, irreplaceable in modern construction. Application of sandwich-panels as enclosure structures can reduce considerably the cost of production and terms of construction, allows to carry out the work at any season. Sandwich-panels do not require heavy spending

for transportation, shipping and assembling, and due to the lightness of the construction it is possible to avoid excessive loading on the basements of the building. Moreover, sandwich-panels are characterised by excellent marks of thermal and sound insulation, environmental friendliness and fire safety, and



Sandwich-panels are modern and high-tech products whose field of application almost does not have any limits. Due to its unique qualities they gain wide popularity throughout Ukraine





due to their covering (as a rule, it is painted steel with different types of surface cambering) they allow to dispense with additional finishing inside and outside the building.

As fill material – internal thermal insulating layer – slag wool and foam

As fill material – internal thermal insulating layer – slag wool and foam polystyrene are used in sandwich panels of TPK.

The true value of all these advantages can be seen only in case if sandwich-panels are made of raw materials of high quality on modern, completely automatic line of the latest generation where important role is left to the quality control at all the stages of production – from the receipt of raw materials to the

final product packaging. Precisely such products are offered by TPK Company to its clients.

#### Sandwich-panels





It is necessary to give special attention to the advantages of our sandwich-panels production line of Italian company «RoboЯ», installed at the plant «TPK-profile» in the city of Belaya Tserkov (Kiev region), as they, together with raw material of high quality, efficient production process, experienced and professional employees, determine undeniable advantages of TPK sandwich-panels in comparison with present at the market analogues.

• Our production line is a line of continuous action. All the operations are linked on the unique technological process which is made under control of computer program. Furthermore the influence of «human factor» is maximally decreased that gives possibility to obtain the best quality of products.

- Due to the fact that cutting and laying of slag wool lamina are made automatic, the lamina inside sandwich-panels are laid without errors of closures and create solid thermal insulating layer.
- The system of gluing is considerably improved - the components are mixed in mixer, the mixture is heated, and then is

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#### TPK sandwich panels production line





applied with spray lance. This gives possibility to obtain homogeneity of the glue composition and regularity of gluing on the surface that avoids visual form of starved spots.

o Twenty metre pressure plate apparatus, installed on the line, has exceptional system of aprons heating using the method of hot air blow-off, and automatic system of panel hold-down height adjustment. During this process sandwich-panel is equally pressed in the entire area and from both sides that guaranties regular warm-up and regular gluing of good quality. In the result the

glue connection becomes firm, and sandwich-panels are reliable and continuous.

- o Mechanic supply of finished sandwich-panels guaranties absence of blemishes of final products in the process of stockpiling for further packaging, and packaging of good quality encourages integrity maintenance and ideal visual form of the panels even after continuous transportation.
- The most important quality parameter of sandwich-panels is the construction of their locks (juncture of two SPs). That is why we offer to our

clients the improved construction of locks profiles that allow to joint ideally two panels during the assembling.

We are proud of hundreds of successfully carried out projects throughout Ukraine and beyond its boards, among these projects there are industrial, warehouse, trade, administrative buildings, sport complexes and many other things.

#### \* Inickness \*\* Total and useful width

## Wall sandwich-panel

Sandwich-panel with open type of lock

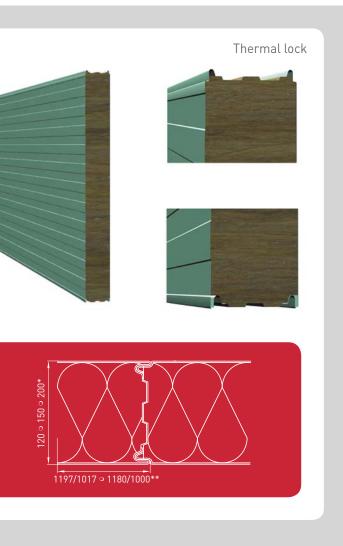
With thermal lock

With closed type of lock

Possibility of choice of the lock type (standardopen, closed, energy-saving thermal or closed architectural) in every separate situation allows to obtain the best combination of assembling quality and esthetic visual form of the building.



Wall sandwich-panels are multilayer hinged non-aerated enclosure structures of walls of frame building, they are applied also for instalment of internal partitions and beam ceilings













## Roof sandwich-panel

Sandwich-panel with roof type of lock

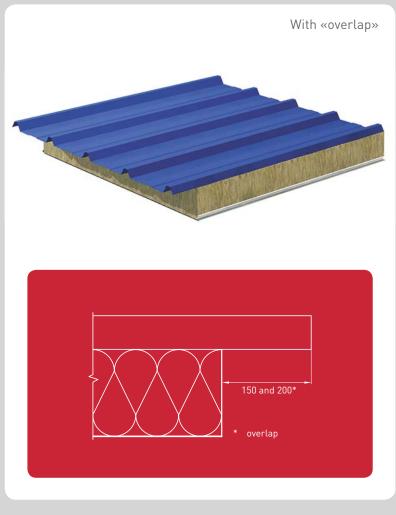
Sandwich-panel with «overlap»

Outstanding feature of roof sandwichpanels is presence on the external coat of trapezoidal corrugations (height of corrugation is 40 mm), filled up with heat retainer. The corrugations give additional rigidity to the panels and provide caulking of junctures along the panel.

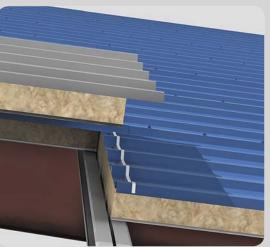
Overlap (eng) means – convergence, issue. The main advantage of SP with overlap – is a possibility of use of several sandwich-panels along the slope without the loss of necessary level of waterproof.

The use of roof sandwich-panels with intersections («overlap») give possibility to obtain hermiticity and water proof of the roof for slopes of coverings of different difficulty.

Roof sandwich-panels are multilayer combined non-aerated coverings that are applied for instalment of roofs of the buildings and constructions with the angle slopes not less than 10%

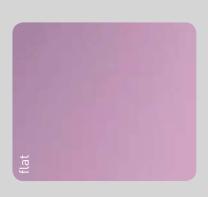






Types of profiling of coats: rear









#### Internal wall cassette

Internal wall cassette (IWC)

Internal wall cassette (IWC) are intended to assembling of self-bearing enclosure construction of walls on the frame, with the distance between columns equal up to 9 meters. If in this case the internal surface of the wall with the use of IWC has attractive visual form, and external surface can be coated with profiled roofing, facade panels or facade cassette.

Main advantages of IWC:

 Cost effectiveness and functional efficacy — this product combines two elements of enclosure structure: horizontal wall crossbeam intended to the assembling of external protective element (profile roofing, facade cassette, facade panels etc.), and material of interior finish. IWC is a constructive material of galvanized steel with polymeric coating intended to instalment of solid load-bearing base of enclosure structures of frame buildings





- More rigid construction due to the fact that profile roofing is fitted perpendicularly to the cassette lines.
- Internal space of cassette can be used for placement of thermal insulating material.
- Fitting of internal wall cassette is made directly to the columns of the frame, it allows to avoid necessity of instalment of assembling tables.
- Use of additional self-adhesive laying removes thermal bridge and decreases the break out of wind and rain.
- In addition, vertical wall of IWC performs the functions of vapour barrier
- It has characteristics satisfying the parameters of fireproof for all classes of buildings that is confirmed by appropriate tests.

#### Wall profile

Profiles for instalment of facades of buildings and interior finishing of the buildings  $T\Pi$ -8,  $T\Pi$ -18 (20),  $T\Pi$ -35,  $T\Pi$ -45

Wall profiles are characterised by the presence of corrugations of little height. Due to their universality, endurance, reliability, firmness of assembling, comfort of transportation, good visual form and cost effectiveness the profile became an irreplaceable material in facades instalment of different commercial, industrial and social-administrative buildings, in construction of walls of production units, warehouses, trade pavilions, and sheds

Profile can be distinguished by the thickness of the sheet, height of «rib» and distance between the «rib».



Profile is one of the most popular building materials for wall instalment of the buildings of different destination. It is made of galvanized steel with polymeric coating (without polymeric coating)





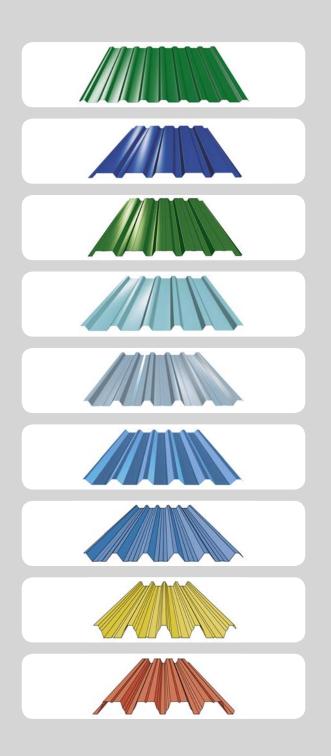


#### I Roofing profile

Profiles for instalment of roof of buildings  $T\Pi$ -20,  $T\Pi$ -35,  $T\Pi$ -45,  $T\Pi$ -60

In comparison with wall profiles, roof profiles are characterised by higher corrugations, and additional ribbed stiffeners that give possibility to the profile to endure mechanical loadings typical for roof. High reliability, firmness, attractive visual form and wide range of colours, comfortable use and minimal service expenses – all these factors make roof profile one of the most popular building materials. The constructions and coatings from profile keep their visual form and exploitation characteristics provided they are assembled with high quality.

Profile is practical and endurable roof material that is widely used for big slope roofs instalment of the buildings of different destination. It is made of galvanized steel with polymeric coating (without polymeric coating)







# Load-bearing profiles for coatings and beams

Load-bearing profiles  $T\Pi$ -60,  $T\Pi$ -85,  $T\Pi$ -128

Load-bearing profiles are characterised by increased reliability due to the presence of high corrugations and use of more thick steel for their production (0.5 mm-1.25 mm). That is why load-bearing profiles endure constant considerable loading and are used in places where it is present in order to install load-bearing roof base or permanent form for solid-cast reinforced concrete floors.

Load-bearing profile is used for instalment of solid load-bearing base of coatings and beams for industrial and commercial buildings.

It is made of galvanized steel with polymeric coating (without polymeric coating)

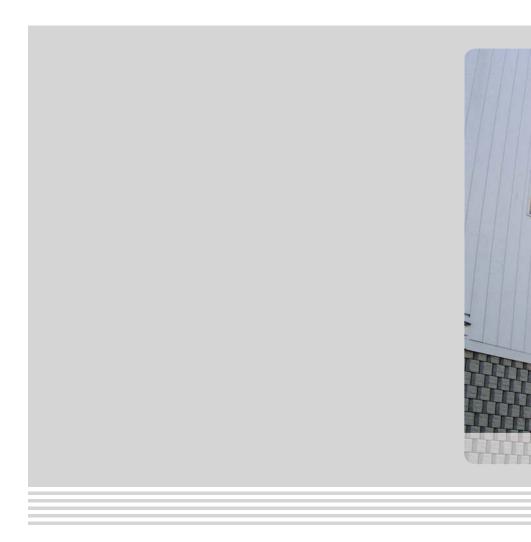






#### Facade panels

Facade panels of PF type

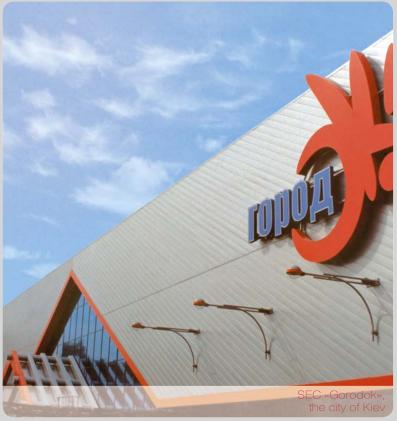


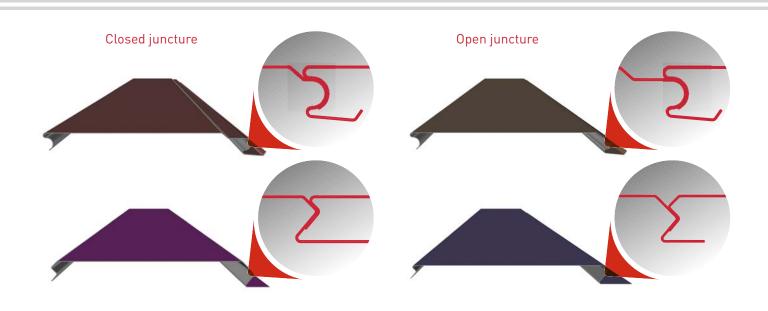
Facade panels are used as facing layer in hinged aerated facade systems and suit ideally for finishing of the buildings of absolutely different destination. The installed facade panels do not require difficult servicing; they are endurable and easy to assemble; they do not require

special preparation of the facade; they are resistant to precipitation and change of the temperatures. Due to the possibility of choice of panels juncture type (open or closed), and desirable panels colour it is possible to create individual and original facade.

Facade panels represent original constructive element whose forms and sizes allow to use horizontal, vertical and inclined placement scheme on the facade surface













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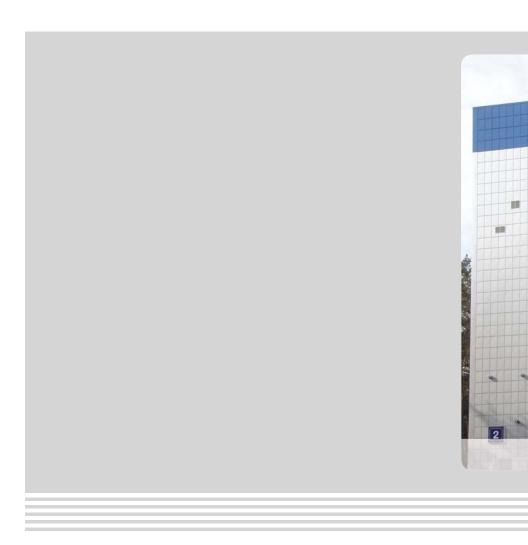






#### Facade cassette

Facade cassette TPK-1000 TPK-3000



Cassette give modern view to the facades, make the buildings more expressive. Facade cassette are made of galvanized steel with polymeric coating of the highest quality, and due to this fact they are endurable and fire safe. That is why they are chosen for finishing of facades of different administrative, public and trade objects.

TPK-1000 and TPK-3000 facade cassette give possibility to make projects for HEF with different combinations of dimensional

specifications of cassette. TPK-1000 Cassette is constructible in assembling because of handy placement of fitting elements.

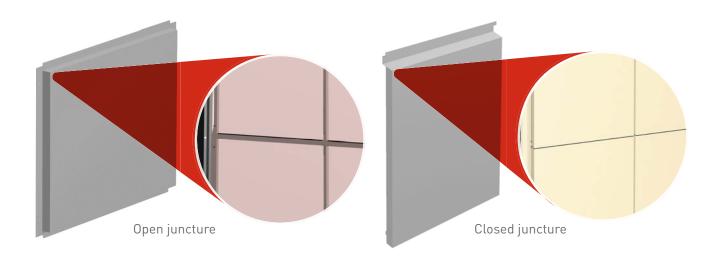
TPK-3000 cassette is aesthetically ideal due to absence of visible fitting elements.

Wide range of colours of polymeric coating and full set of selected elements gives possibility to implement any designer solutions and give completed shape to the building.

Facade cassette are intended for forming of exclusive visual form of the building, they suit ideally for instalment of aerated high-class facade











# Facade system MTH Concertto

Facade system of shaped sheet steel MTH Concertto



System for facades MTH Concertto combines the best qualities of facade cassette and profiled sheet. It is made of galvanized steel with protective coating PVDF of PVDF 35 µm. This coating has excellent resistance to ultraviolet radiation and aggressive environments; that is why it is convenient for siding of the buildings with special requirements.

Facade sheet MTH Concertto contains numerous texture modules of square or rectangular form on

one sheet. New system is easy to assemble ad represent qualitative alternative to other finishing materials for use inside and outside of the buildings, as well as for ceilings finishing.

The width of square is standard in different variants, and the length can be adjusted within established marginal values. Considerable advantage of the system is making small modules, ease of instalment and the unique in its category visual form.

MTH Concertto facade system is individual and qualitative possibility to use sheet steel as coating material for external and internal walls, and for ceilings





The most typical objects of products usage are commercial and office buildings, sales centres, airports, gas stations, and other modern buildings. The product suits excellently for old buildings facades reconstruction. The number of cut edges in offered system is minimal; the product does not contain flat horizontal surfaces where the impurities gather. Hermetical and unique package provides also good sound insulation. Besides flat surfaces MTH Concertto is

absolutely convenient for deviated surfaces.

#### Advantages MTH Concertto Of facade system:

- assembling and costeffectiveness (like profile);
- considerable acceleration of facade planning and instalment;
- o reduction inn value of materials

- and assemble of sub-construction in comparison with facade cassette and panels;
- luxury and aesthetic visual form of building;
- correspondence to all ecological and sanitary regulations;
- coating provides the best anticorrosion features;
- exclusivity of the offer on Ukrainian market.





# Rib-roof

Zambelli Roof System

Field of application of roof material of Zambelli Company is quite large. They can be successfully used on sloped and flat roofs of all types of buildings (residential, civil, industrial), and in other cases, taking into consideration the fact that profiled sheets are self-bearing.

In order to create a novelty the sheet materials are used — steel painted with polymer (polyester, PVDF), stainless steel, aluminium,

copper, titanium-zinc. Thickness of painted steel equals to 0.63 or 0.75 mm, of stainless steel -0.5 mm or 0.6 mm, aluminium - from 0.7 mm to 1,2 mm, copper -0.6 mm, titanium-zinc -0.7 mm, 0.8 mm, 1 mm.

In order to expand the endurance of steel profiled sheet traditional protective coatings are used — layers of zinc, padding, and coloration with polymeric paints. Due to this the operating life of

The products of German company Zambelli represents industrially profiled metal sheet whose visual form corresponds almost completely to the usual rebate coating





roof material comprises more than 50 years, and the manufacturer — Zambelli Company — gives warranty for 10 years.

It is necessary to mark that new coating can be used for covering not only flat bases, but also curved ones. The possible minimal flexure is determined by model, type and thickness of material. Thus, for profiled sheet of model RIB-ROOF Speed 500 of painted steel of 0.63 mm the minimal radius equals to

4 m, for those made of aluminium of 1 mm -2 m, for those made of aluminium of 0.9 mm -3 m, for those made of aluminium of 0.8 mm -4 m. sheets of titanium-zinc and copper also can be bended as these materials are of considerable plasticity. However, that is not all. It is possible to give to the sheets conic form - flat in plane as well as curved one (radial).

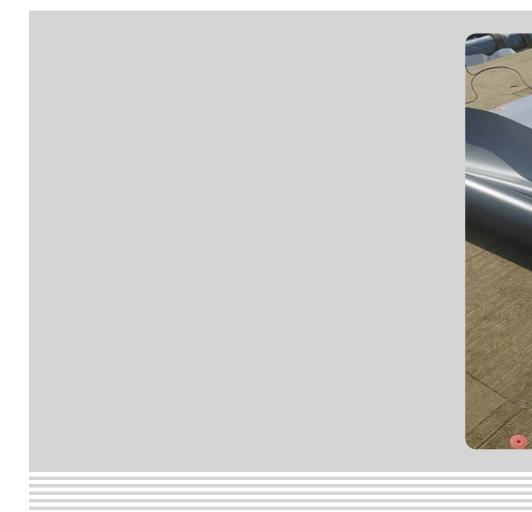
Moreover, Zambelli coating differs by the manufacturing method. If the required length of the sheet does not exceed 13 m, the portable machine, placed in the container, is used; it profiles the sheets of required configuration and length directly at the object. The manufacturing method causes such advantages: the length of the sheet is almost unlimited, and the profiles sheet can be immediately directed to the roof.





# Flat roof

Polymeric roof membranes



Polymeric membranes being evolutional development of traditional rolled materials gain wide popularity in Europe and in Ukraine. Polymeric membrane roof differs by its reliability, elasticity, high resistance to atmosphere and climate influences, and ease of assembling.

Use of polymeric membranes is particularly effective and

economically adjusted on big commercial roofs when the quality and the speed of assembling are determining factors.

Polymeric membranes are applied for new building and for reconstruction of roofs with the use of mechanical way of fitting or with the use of inert material, instalment of «green roofs». The sheets of polymeric membranes are joined

TPK Company offers PVC and TPP membranes, accessories, internal draining systems, special vapour isolation, geo-textile, fitting element, assembling equipment, hermetic and glues, roofing heads





between each other by means of welding. Welded connections have higher firmness than the sheets themselves and are root-proof. Among the polymeric membrane

PVC membrane is rolled roof

PVC membrane is rolled roof material of thermal plastic polyvinyl chloride (PVC-P).

TPP membrane is rolled roof material on the basis of thermal plastic polyolefin (TPP).

Advantages of PVC and TPP membranes:

Преимущества ПВХ и ТПО мембран:

- big surface of material in a roll less junctions and reduction in expenses on overlapping of the sheets;
- have reduced degree of flammability;
- possibility of laying almost all year round and under any weather conditions;
- high resistance to ultraviolet radiation, temperatures changes, industrial emissions into the atmosphere.





# Flat roof

Flat skylights

Light, air, and safety – these are the main conditions that are necessary to people for comfortable life and work.

Light is illumination with maximum use of daylight and reduce in artificial tight.

Air is ventilation with the use of natural air exchange in order to improve microclimate in the premise.

Safety means provision of fire safety, creation of barriers for fire expansion and high temperatures expansion, deliberating of space of fume and carbon monoxide to get possibility to evacuate and fight the fire.

Flat skylights represent reasonable solution combining all the abovelisted functions of industrial and commercial buildings.

The advantages of use of flat skylights in the building are obvious:

# Flat skylights are used for illumination, ventilation and smoke control in case of fire





- natural illumination;
- possibility of daily natural ventilation;
- decrease of building fire rate;
- limitation of fire expansion;
- reduction of temperature load on the building (roof, beam, walls), people, material values in building on case of a fire.

Flat skylight is a system of natural illumination, smoke control,

ventilation; it is situated on the roof. It consists of bearing part and translucent part – a dome.

Flat skylights are divided into spot lights and stripe lights; they are used in accordance with project solution or functional necessity for one or another object.

According to their type the lights can be divided into dumb light, used for natural illumination only,

and opened, used for illumination, ventilation, and smoke control.

Correct technical calculation of flat skylights will assure more comfortable and safe stay of people inside the building, as well as huge economic effect form natural illumination and ventilation.





# Completion materials

An integral part of roof and facade system if industrial and commercial construction (ICC) is represented by main completion materials; their absence makes impossible assembly and further exploitation of the building:

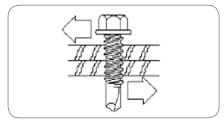
SPECIAL FITTIGN ELEMENTS VAPOUR BARRIER MEMBRANES OF INDUSTRIAL DESTINATION PACKING AND HERMETIC MATERIALS

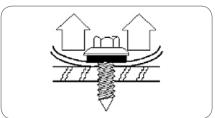


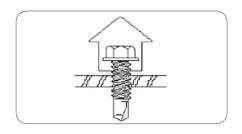
#### SPECIAL FITTIGN ELEMENTS

Quality constitutive elements of fitting elements in ICC systems are as follows:

- quality (mark) of steel workpieces;
- thickness of galvanization and way of its putting onto;
- o quality of powder paint and its thickness;
- quality of EPDM-filler;
- manufacturer's warranty.







of steel workpieces.

Quality (mark)

It is impossible to determine visually, but it is possible to determine the quality while twisting in steel profile — the fitting of steel of low quality cannot not be twisted in, it is necessary to adjust the screw driver on big number of twists that causes sharp increase of the temperature in the place of twisting, and consequently causes damage of spiral drill, including the galvanisation. In the result fitting wears out and requires replacement, or it is twisted but stains fast. Also steel quality influences further use of fitting in the system, namely regarding resistance to tearing, pulling through, and shearing.

#### Thickness of galvanization and way of its putting onto steel workpiece.

The more thick zinc is, the better the steel will be protected against corrosion. Of course, it is very rough estimation but we can consider that in a year as the result of environment influence the fitting loses about 0.5 µm of zinc. At the same time during the twisting in it loses about 1-1.5 µm of zinc. For example, the standard is that roof fitting must have not less than 12 µm of zinc; the enforced fitting must have not less than

22 µm of zinc. As visually this parameter is almost impossible to identify, the most part of fittings in CIS countries has thickness of zinc from 3 to 7 µm that reduce their price considerably, but their endurance is also reduced. The galvanization method also influences the quality if fitting. If the steel workpieces are galvanized on the lines which are not specialized at this process. the fitting will look good but after a short period of time zinc can oxidize or drop behind.

#### Quality of powder paint and its thickness.

Today the most progressive method of powder painting is electrostatic This spraying. technology based on the fact that during the spraying process dry powder parts get electric charge, meanwhile the painted surface (i.e. fitting) is electrically neutral. The charged powder and neutral work area create electrostatic field that attract dry parts of the paint to the surface. Surface painted with the use of this method is placed in special furnace where the parts of the paint melt and are absorbed by the surface, gradually losing their charge. Powder painting with the use of this technology provides forming of hit proof corrosion coating that can work within the

temperature range starting from  $-60^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$  and endures sharp change of the temperature. The thickness of the powder coating must constitute not less than 24  $\mu\text{m}$  but not more than 50  $\mu\text{m}$ . It is necessary to note that the most popular technology of painting in Ukraine is so called, handicraft, «garage» method – painting by means of air compressor. Such

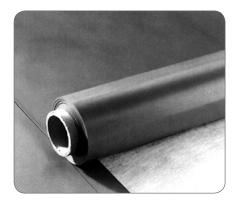
method of painting is inadmissible for fitting elements.

## Quality of EPDM-filler in fitting element.

Due to the presence of EPDM-filler hermiticity of juncture is provided, that is why it is so important that it kept its features for a long time (elasticity, density, integrity), even during the change of weather conditions (first of all, the temperature). During the usage of low-quantity fillers during the roof exploitation process with the change of temperatures very often they lose their properties, become warped and crack. Therefore composition of high-quality EPDM-fillers includes special additions that improve their exploitation properties.

#### VAPOUR BARRIER MEMBRANES OF INDUSTRIAL DESTINATION

In ICC systems it is necessary to apply special vapour membrane that differs from usual vapour barrier on slope roof. In such case the following parameters are important: (a) high density, and consequently vapour-proof; (b) maximum resistance to the aggressive environments; (c) high UV stability; (d) confort, effectiveness of its use during the assembling.



#### Advantages of use:

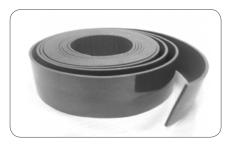
 More comfortable and fast assembling of the membrane at the expense of application of

- rolls of «semi-sleeve» type of width of 6 meters. One roll cover surface of 300 m2, and layer works can be accomplished two times quicker than with usual membrane of 1.5 m x 50 m.
- Considerable economy of vapour barrier ribbon — 6-meter of width of vapour barrier the expenses of ribbon is reduced on the average by 2.5-3 times. If we compare, during the usage of usual vapour barrier ribbon it is necessary to tighten overlaps every 1.5 meters. Consequently in terms of money it is considerable economy as the value of ready solution of vapour insulation with hermetic ribbon application is to be calculated in proportion of 60% of expenses for the membrane, and 40% of expenses for ribbon.
- Optimal firmness of rupture. On the flat roof due to the absence of additional load on the vapour barrier there is no necessity to use membrane with reinforced layer. Due to this fact there is

- possibility to expand total width of the membrane (and it means to improve the vapour-proof) reducing the value of vapour barrier in the whole.
- The index of vapour-proof is much higher than those of usual reinforced sub-roof membrane that is particularly important for objects of civil and industrial destination with augmented concentration of water vapour in the premise.
- o UV stability − 12 months − is specially aimed for use on flat roofs of big surfaces, where the risk of exceeding of preliminary planned terms of assembling often takes place (as the result slowdown, suspense on construction or temporary conservation of the object). The average UV stability of standard high-quality membranes production European does not exceed 3 months; UV stability of membranes of Asian production is from 7 to 30 days at maximum.

#### PACKING AND HERMETIC MATERIALS

Packing and hermetic materials are indispensable in al solutions for objects of industrial and commercial destination. These insulating



packing materials combine numerous functions: water, sound, vibro- and thermal insulation. But the main function is liquidation of temperature bridges.

#### Advantages of the use:

- excellent hit and sound insulation;
- almost nil water absorption;
- handy in use at the expense of softness, elasticity and small weigh of the material

- keep elasticity under the temperatures of -80°C to +100°C:
- vendurance, resistance to mycotic lesion, corrosion, ultraviolet radiation, alkalescences, weak acids, atmosphere influence;
- absence of plasticizers, and thus ecological safety.

# Roof and facade solutions from aluminium

Use of painted aluminium for facades and roofs instalment allows to bring to life the most courageous architecture ideas

The advantages of light, firm, ease in service and endurable aluminium consist in astonishing colour variations, and give inspiration to create real architectural masterpieces combining functionality and attractiveness. Almost unlimited range of coatings put into aluminium surfaces creates unusual colour palette giving possibility to implement really innovation solutions in design.











# Certificates









# I For notes




### **Contact information**

Ukraine

Belaya Tserkov +38 045 3-46-07, 3-46-24

Berdiansk +38 06153 4-71-92

 Vinnitsa
 +38 0432 57-80-58 [59], 57-05-84

 Dnepropetrovsk
 +38 056 790-71-91 [92, 93]

 Donetsk
 +38 062 334-97-78 [79], 334-98-08

 Zhitomir
 +38 0412 41-16-61,41-15-77

 Zaporozhie
 +38 061 220-99-32, 228-10-87 [88]

Ivano-Frankovsk +38 03422 226-55 Kiev +38 044 492 -90-00

Kirovograd +38 0522 22-99-03, 35-40-61 Kremenchug +38 0536 70-10-42 (43) Krivoy Rog +38 0564 90-06-02, 92-42-90 Lugansk +38 0642 59-97-58, 34-79-98 Lutsk +38 0332 77-63-28, 24-54-07

Lvov +38 032 294-95-85 Nikolayev +38 051 247-99-34

Odessa +38 048 237-16-08, 728-63-17 Poltava +38 0532 61-39-97 [98] Rovno +38 0362 62-33-53, 22-68-56

Sevastopol +38 069 248-77-77

+38 0652 24-81-28, 51-41-39 Simferopol Sumy +38 0542 77-16-66, 77-16-78 +38 0352 43-56-33, 43-39-39 Ternopol +38 0312 61-27-09, 61-33-37 Uzhgorod Kharkov +38 0577-51-83-88(89) +38 0382 70-29-39, 72-01-48 Khmelnitsky Cherkassy +38 0472 36-11-03, 36-05-88 Chernigov +38 04622 443-66, 440-36 +38 0372 51-45-20 Chernovtsy

Kazakhstan

Aktau +7 729 254-52-31, 254 52 32

Atyrau +7 712 232-08-98

Moldova

Kishinev +3 7322 21-09-54, 21-20-74

www.tpk.ua