

Standard production

Standard production of PE and PP sheets, flexibility represented by possibility of small lot production, special dimensions, colours, sheets in rolls. Compounded materials of various grades with fillers, reprocessed materials, developmental orientation and customer orientation. Granulates – compounds for extrusion and injection moulding, “Tailor-made” compounds combined so as to create thermoplastic materials that meet actual customer demands.



Special programme

Years of experience in the area of compounding and existing technologies twin screw compounders with a lateral side feeding of filler allows us to create composites in the shape of plates - inline extrusion; as well as the production of granulates with various fillers for further processing through injection moulding, extrusion and press moulding.

The specially prepared geometry of screw segments allow for the homogenous mixing of mineral and natural fillers and various additives into the composite.



• Extruded sheets PE, PP for:

- Linings
- Thermal processing
- Chemical and mechanical equipment
- Transport pallets
- Packaging
- Water cisterns

• Special programme

• LIP (PP with wood)

- for the furniture, automotive and construction industries.

• PPT TALK

- for the electro industries
- food processing industries

• Technical thermoplastics

- for the vehicle transportation industry

• Materials for sound insulation

- measurements

• Sheets with structured surfaces

• Co-extruded sheets

• Electro conductive polymeric material

• Sleeper pads

• Self-extinguishable polymeric materials

• Compounds for extrusion and injection moulding

• Combined program Isoform - Isoport

- LaminaeX sandwich panels

Isoform PE-HD

POLYETHYLENE is a tough, firm material with a waxy touch that is resistant to organic solvents, acids, lye, diluents, fruit juices, water and fats. Not resistant to aromatics and chlorohydrocarbons. Physiologically, the material is innocuous and suitable for direct contact with foodstuffs.



Application of PE HD:

PE - HD in the form of sheet is suitable for vacuum forming, pressure forming and welding.

colours:

Standard:		Additional colours:	
Natural		White	Orange
Black		Yellow	Grey
Green		Melon	Blue
		Red	Black marble

Additional colours are available upon request.

• extruded sheets PE, PP

Isoform PE-HD
Isoform PP

PE-HD

Reservoirs, cutting boards, various casting moulds...

Extruded sheets from high-density polyethylene

* Density of PE-HD = 0.95 g/cm³

- Maximum width of standard sheets = 1500 mm
- Non-standard formats and thicknesses by request
- Optional production in rolls

Options:

- UV stabiliser
- Anti-static
- Protective foil

Isoform PE-HD

Thickness (mm)	Thickness tolerance (mm)	Weight (kg/m ²)
2	±0,14	1.92
3	±0,17	2.88
4	±0,20	3.84
5	±0,23	4.80
6	±0,26	5.76
8	±0,32	7.68
10	±0,38	9.60
12	±0,44	11.52
15	±0,54	14.40

Isoform PP

POLYPROPYLENE is distinguished by its low density, hardness, resistance to most chemicals, and good dimensional stability even at temperatures of 100 °C.

It is becoming an increasingly more common material due to its all-round characteristics.

It has better thermal and mechanical properties than PE-HD; however, it is less resistant to impact at low temperatures.

Copolymer types have a better impact strength also at low temperatures.

Physiologically, the material is innocuous and suitable for direct contact with foodstuffs.

Application of PP

Packaging, orthopaedic accessories, swimming pools, pallets, reservoirs, water pump parts, laboratory equipment, various housings...

colours:

Standardne:	
Natural	
Grey	

Additional colours are available upon request.



• extruded sheets PE, PP

Isoform PE-HD Isoform PP

Material

Extruded PP-homopolymers and PP-copolymers:

** Density of PP = 0.905 g/cm³*

Maximum sheet width = 1500 mm

Optional production in rolls

Options:

- Flame retardant
- UV stabiliser
- Anti-static
- Protective foil

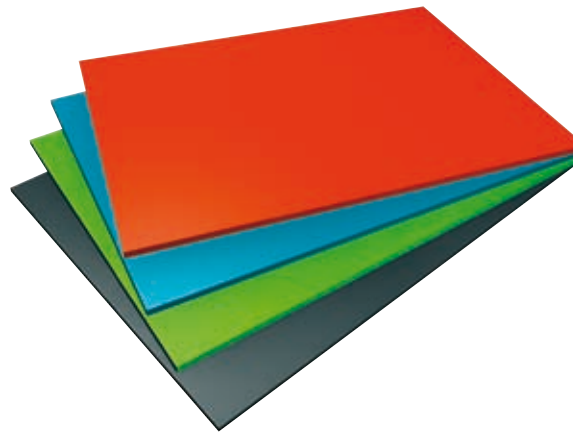
Isoform PP

Thickness (mm)	Thickness tolerance (mm)	Weight (kg/m ²)
2	±0,14	1.82
3	±0,17	2.73
4	±0,20	3.64
5	±0,23	4.55
6	±0,26	5.46
8	±0,32	7.28
10	±0,38	9.10

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• special programme:

- **LIP (PP with wood)**
 - For the furniture, automotive and construction industries.
- **PPT TALK**
 - For the electro industry
 - For the food processing industry
- **Technical thermoplastics**
 - For the transport industry (heavy layer)
- **Materials for sound insulation**
 - Measurements
- **Sheets with structured surfaces**
- **Co-extruded sheets**
- **Electro conductive polymeric material**
- **Sleeper pads**
- **Self-extinguishable polymeric materials**

LIP (PP with wood)

Isoform LIP is a composite material made up of polypropylene and wood. Extruded into sheets with an additional surface treatment that allows for gluing, it is suitable for use in construction, as a contact layer on birch plywood sheets. The product is physiologically innocuous, suitable for direct contact with foodstuffs, and easy to recycle.



Material:

Maximum width: 1550 mm

Thickness: 1 – 4 mm

Length: 1000 – 3000 mm,

Rolls are available by agreement.

Application:

Furniture industry: edge-finishing strips for tables, wardrobes...

Automotive industry:

linings for trunk spaces, rear shelves

Construction: contact layer for visible sheets

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PPT for the electrical industry

These sheets are based on polypropylene filled with talc.

Extruded PTT sheets are distinguished by increased rigidity and a higher temperature heat distortion. (HDT).

PPT30 RAL 7035 sheets in an electric grey colour with optional flame retardant are used in the electrical industry, and are in compliance with the IEC 60695-2-12 standard (glow-wire flammability test) up to 800 °C.

Material

Available thickness: 1–5 mm

Maximum width: 1500 mm

Colours:

Standard colours:	
Natural	
Grey	

Additional colours are available upon request..



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PP/Talc

Contains talc in a ratio of 10:40

Ratio PP/Talc	Density of the composite (kg/m3)
100/0	0,905
90/10	0,96
80/20	1,05
70/30	1,13
80/40	1,24

PPT for the food processing industry

Extruded PPT sheets are heat resistant to temperatures of up to 130 °C, have a high E-module, and are suitable for direct contact with foodstuffs (FDA). Due to its properties, PPT is suitable as layer sheet for sterilization in the food processing and beverage industries.

Material:

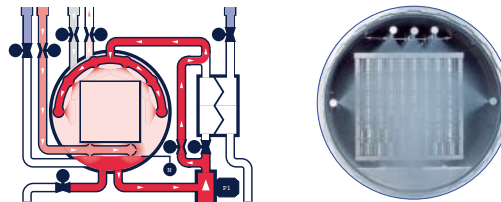
Available thickness: 1–5 mm

Maximum width: 1500 mm

Colours:

Standard colours:	
Natural	
Grey	

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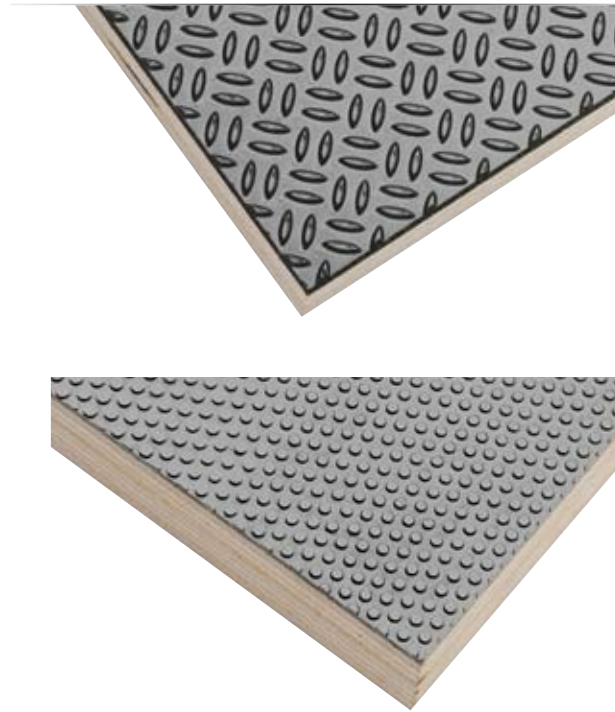
Technical thermoplastics for transport

These sheets are suitable for use in the transport industry as a protective layer on plywood sheets. Their durability is especially demonstrated under tough conditions of use on the trailers of heavier trucks. Depending on the needs or wishes of the customer, special patterns can be imprinted on the surface.

Material:

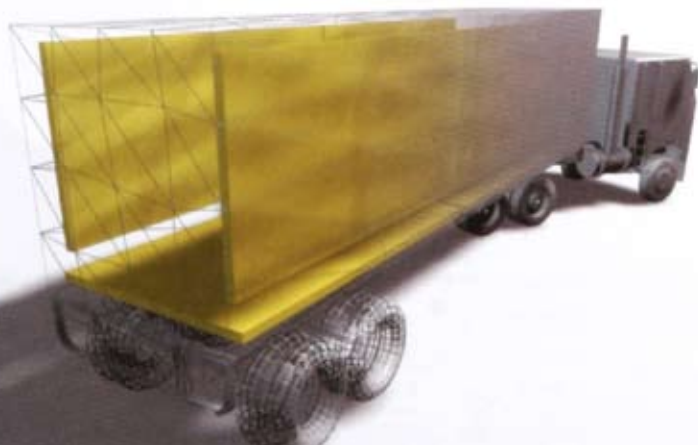
UV resistance

Maximum width: 1500 mm



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Materials for sound insulation (Heavy Layer)

Isoform® Heavy Layer

This is a composite material based on thermoplastic elastomers filled with barium sulphate (BaSO₄). It is distinguished by its high density and flexibility, for it has a modulus of elasticity that is lower than 200 MPa.

At the request of the customer, the sheet can be surface treated, which allows for the gluing with various fabrics, wood, etc. The material is therefore very suitable for sound insulation because of its high density and flexibility. The sheets are available in rolls.

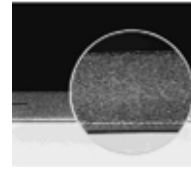
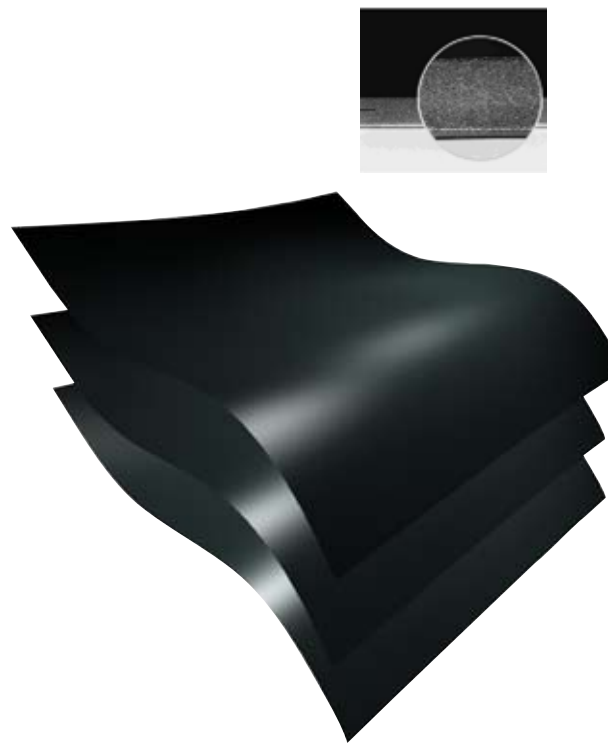
Material

Maximum width: 1500 mm

Rolls are available upon agreement.

Thickness: 1–5 mm

Colours: black, grey

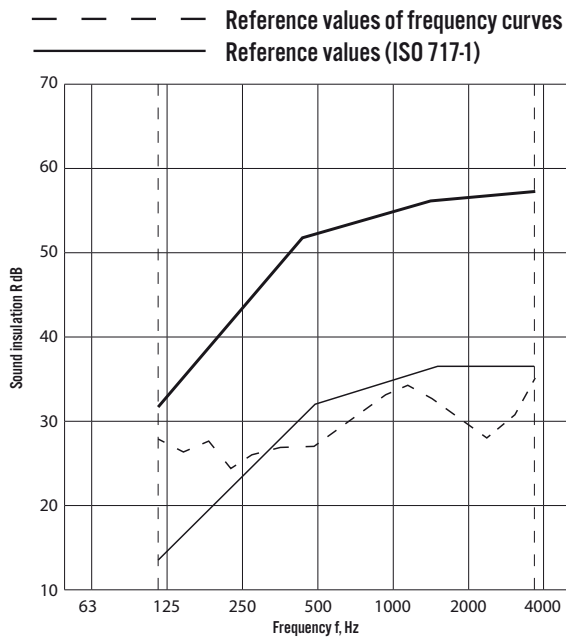


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Materials for sound insulation (heavy layer)

LABORATORY MEASUREMENT OF THE SOUND INSULATION OF CONSTRUCTION ELEMENTS ACCORDING TO THE SIST EN ISO 140-3 STANDARD OF 1997



Dimensions of the sample:	1,94 m ²
Air temperature:	16 °C
Humidity in the measured space:	61%
Volume of the emit space:	54 m ³
Volume of the reception space:	50 m ³

Measurement of R_w for joined sheets with layered insulation sheets with density of 2.6 g/cm³



Frequency f Hz	Sound insulation R dB
50	
63	
80	
100	29,7
125	27,3
160	28,2
200	25,5
250	27,0
315	27,8
400	28,1
500	29,9
630	31,5
800	33,4
1000	34,1
1250	33,6
1600	30,8
2000	28,6
2500	31,0
3150	35,1
4000	
5000	

The sample was placed in the opening of a two-sided roughcast wall made of filled bricks with a density exceeding 500 kg/m³, and the dimensions of the opening were 0.98 x 2.02 m. The upper and lower portions of the sample were affixed on an L-profile 4 mm thick steel surface. The spaces between the opening and the sample were sealed with a permanent plastic sealant.

DIMENSIONS OF THE SAMPLE: 1,00 m x 2,00 m
SAMPLE REFERENCE MARKING: Sample 5
BASIC INGREDIENTS OF THE SAMPLE: joined sheet with an isolative layer with a density of 2.6 g/cm³

Standard SIST EN ISO 717-1, (1997): $R_w(C;C_v)=32(-1;1)$ dB
 Definitions are based on the results of laboratory measurements.

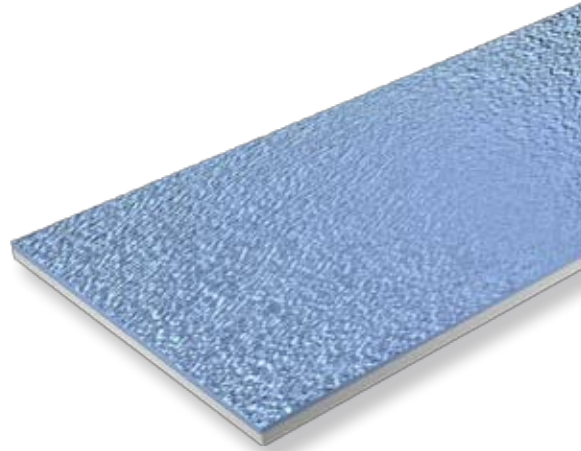
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Sheets with Structured surfaces

If customers desire a higher optical quality of surface, two types of structures are available.

The structured surface is achieved on one side through the exchange of smoothing rolls on the extrusion line.

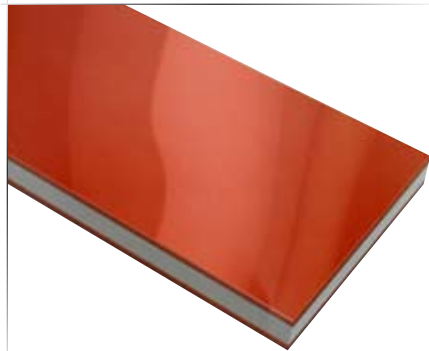
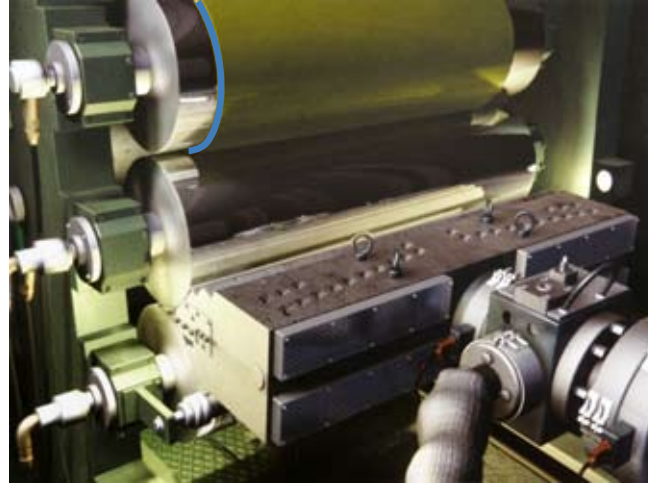


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Co-extruded sheets

Co-extrusion is the process of extruding two or more materials through one tool having two or more openings placed so that the melt connects. An advantage of co-extrusion is that each layer of laminated structure possesses a desired property such as, for example, optical image, rigidity or thermal resistance, or is waterproof or resistant to environmental influences.



MATERIALS	CO-EXTRUSION	GLASS	DIMENSIONS	SURFACE
PE, PP	YES	NO	t = 0,6 -12 mm w = max.1700 mm	• smooth/smooth • glossy/smooth
PE, PP	YES	YES	t = 0,6 -12 mm w = max.1250 mm	• smooth/smooth • glossy/smooth • N1/smooth • N2/smooth
ABS, PE, PP; TPU	YES	YES	t=0,6 -12 mm w = max.1400 mm	• smooth/smooth • N2/smooth • glossy/smooth
ABS, PE, PP; TPU	YES	NO	t = 0,4 -2.0 mm w = max. 700 mm	• smooth/smooth • matt/smooth • matt/matt • glossy/smooth • high glossy/glossy
ABS, PE, PP; TPU	YES	NO	t = 0,4-2.0 2mm w = max. 700 mm	• smooth/smooth • matt/smooth • matt/matt • glossy/smooth • high glossy/glossy

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ELECTRO CONDUCTIVE POLYMERIC MATERIAL

Electrostatic discharge is a natural phenomenon and prevention of its formation is of vital importance, when we are dealing with electro-sensible equipment or explosive goods.

Electrically conductive thermoplastic polymers are usually applied in areas where protection against electrostatic discharge is required, being in antistatic, electrostatic dissipative or conductive applications (ESD protection).

USES:	BENEFITS:
for thermoformed ESD trays	greatly reduce the risk of a catastrophic discharge of electrostatic energy
packaging for electronic devices as well as explosive or flammable goods	reduce the risk of explosion
can be used for fuel system components like surface of petrol pump hoses	conductive properties of the electro conductive polymers are permanent
polyethylene bags or boxes containing explosive materials such as gunpowder	excellent costs / benefit properties

Electro conductivity is achieved by adding electroconductive carbon black which does not effect the basic characteristics of the polymer. The surface resistance of an electrically conductive sheet or granulate (pellets) ranges between 10^4 and 10^{12} Ohm.

With the use of electro conductive extruded sheets and granulates (pellets) you can prevent the creation of an electrostatic charge, thus saving time, money, and making your life easier.

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Case of applications of electro conductive polymers:



SLEEPER PADS

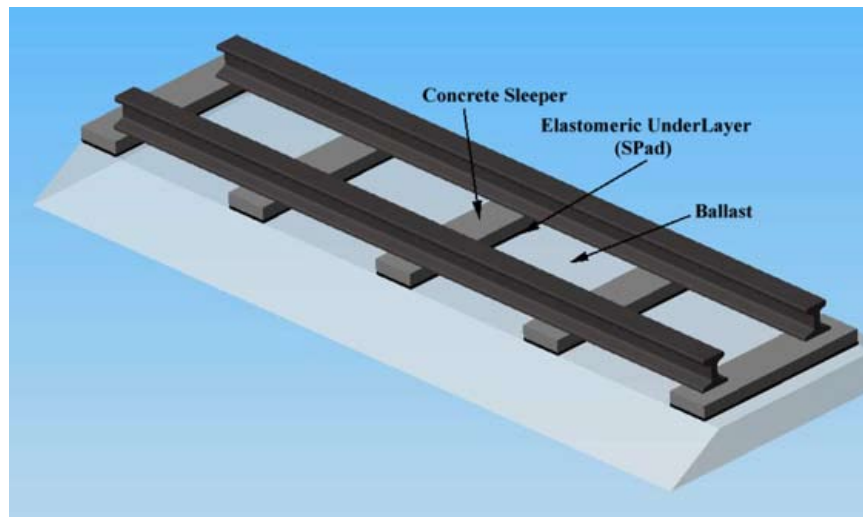
With railway tracks, the direct juncture between **concrete or wooden** sleepers and banked gravel often leads to sleeper and gravel (crushing) damages because of extremely high loads which can lead to the distortion of railway tracks.

Isokon offers **elastic sleeper pads** which, as a base between the sleeper and gravel, greatly **decreases the chance of sleeper distortion** which is the consequence of high loads during train composition passings.

Sleeper pads are resilient elastic pads which are mounted on the base of the sleepers.

The ballast becomes embedded in the elastic pad and is thus subject to lower mechanical loads. This helps to significantly reduce expenses for track superstructure maintenance.

Scheme of application of SLEEPER PADS:



ADVANTAGES OF USING SLEEPER PAD

ADVANTAGES:
Improvement of the long-term life cycle of the track structure and the ballast
Lower track maintenance costs
Adjustment of track stiffness
High axle loads and soft subgrade
Vibration reduction

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Self-extinguishable polimeric materials

Polymers are organic materials and therefore burn. The ever increasing fire safety requirements provide for the use of self-extinguishable materials or will not contribute to the spreading of the fire.

At Isokon, we manufacture self-extinguishable extruded sheets with various self-extinguishing additives. By adding self-extinguishing additives, a polymer sheet can be produced which complies with the UL 94 self-extinguishing test (V-0, V-1, V-2) as well as the glow wire test (EN IEC 60695-2-13 standard). Based on the use of halogen-free self-extinguishing additives, we manufacture RoHS Directive compliant sheets, which are especially important for the use in the electrical industry.



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Compounds for extrusion and injection moulding

Compounds on the basis of PP, PE, PS and ABS with various fillings (wood flour/slats, talc, calcium carbonate, steel wool, glass balls...) and additives (colouring, UV-stabilisers, anti-statics...).

PA6 compounds with fillings are available upon request.

All compounds are prepared according to the wishes of the customer, allowing for various modifications.



• Compounds for extrusion and injection moulding



BASIC POLYMER	FILLING, ADDITIVE	AREAS OF USE
PP	Glass balls, silicone, PTFE, UV stabilisers, talc, mica, steel wool, calcium carbonate, additional flame retardant, carbon fibres, aramid, anti-static, wood flour, elastomer	Household containers, packaging for various foods, boards, foils, housing and mooring of household appliances and electro-technical devices, various pipes (central heating, transport of gas, oil, seawater), automobile parts
HDPE	Glass balls, silicone, PTFE, UV stabilisers, talc, mica, steel wool, calcium carbonate, additional flame retardant, anti-static, wood flour	Larger containers, baskets, containers and plasticware, gasoline reservoirs, pipes, cable linings
PS	Glass balls, silicone, PTFE, UV stabilisers, carbon fibres, anti-static, wood flour, elastomer	Packaging for food, various containers, picture frames, combs, toothbrushes, toys, housings for many technical devices, parts in refrigerators, bathroom furnishings, automotive parts, cassettes
ABS	Glass balls, silicone, PTFE, UV stabilisers, carbon fibres, elastomer	Housings for electrical devices and office equipment, housings for appliances, vacuum cleaners, garden furniture, suitcases, protective helmets, transport packaging, technical toys, toy blocks

Combined programme Isoform - Isosport

In addition to our own range of products, products from the production programme of our parent company, ISOSPORT in Austria, are also available:



- Combined programme Isoform - Isosport:
- LaminaeX sandwich panels

LAMINATION: PP foam can be laminated with aluminium and co-extruded on both sides.



LaminaeX sandwich panels

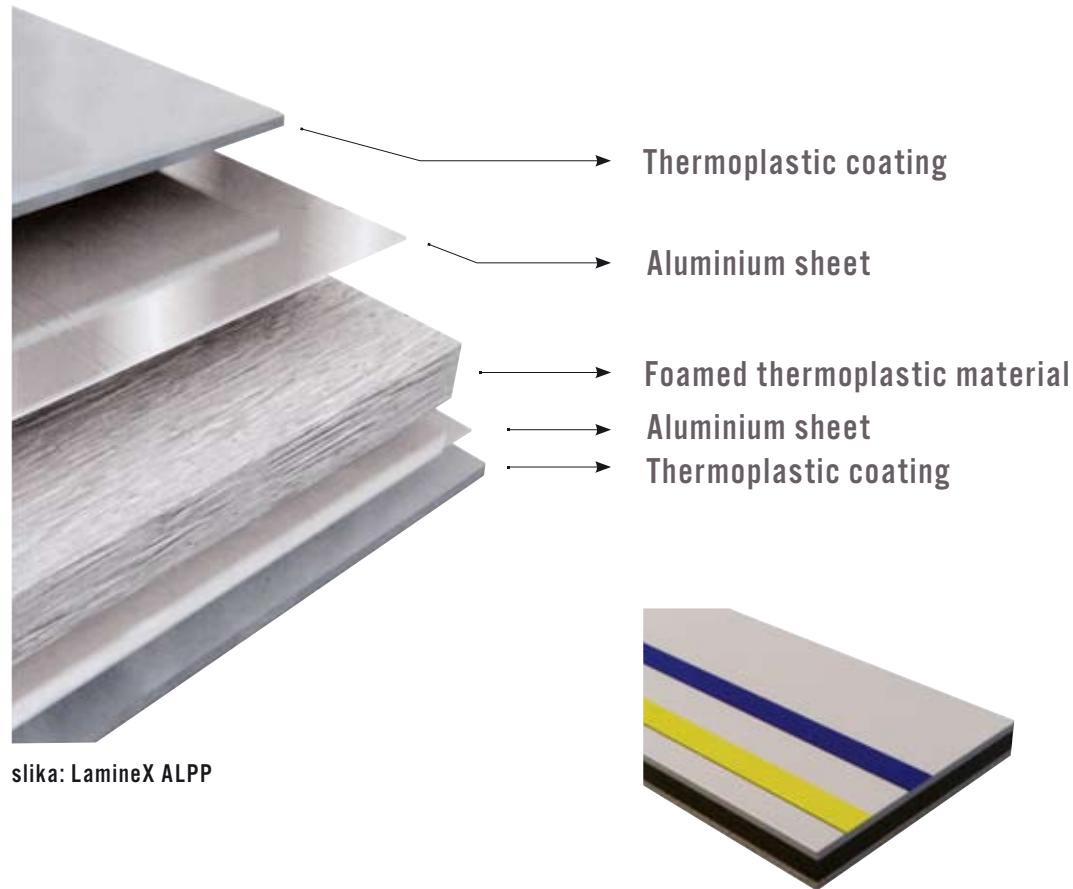
Isosport – LaminaeX

In order to satisfy the increasing demand for longterm durability, high rigidity and low sheet weight, we at Isosport GmbH have developed LaminaeX composite sheets. The sheets are made of a thick, light core, covered on both sides with a thin layer of aluminium or glass fibre reinforced with a plastic mass and a layer of thermoplastic material. These additional layers increase the stability and elastic stiffness to the highest degree, while the strong core ensures suitable resistance to shear.

Application:

Construction: walls, platforms, portable walls, advertising boards, playgrounds...

Transport applications: floors of smaller trailers, walls and floors of truck trailers, interior paneling for ships...



- Combined programme Isoform - Isosport:

- LaminaeX sandwich panels