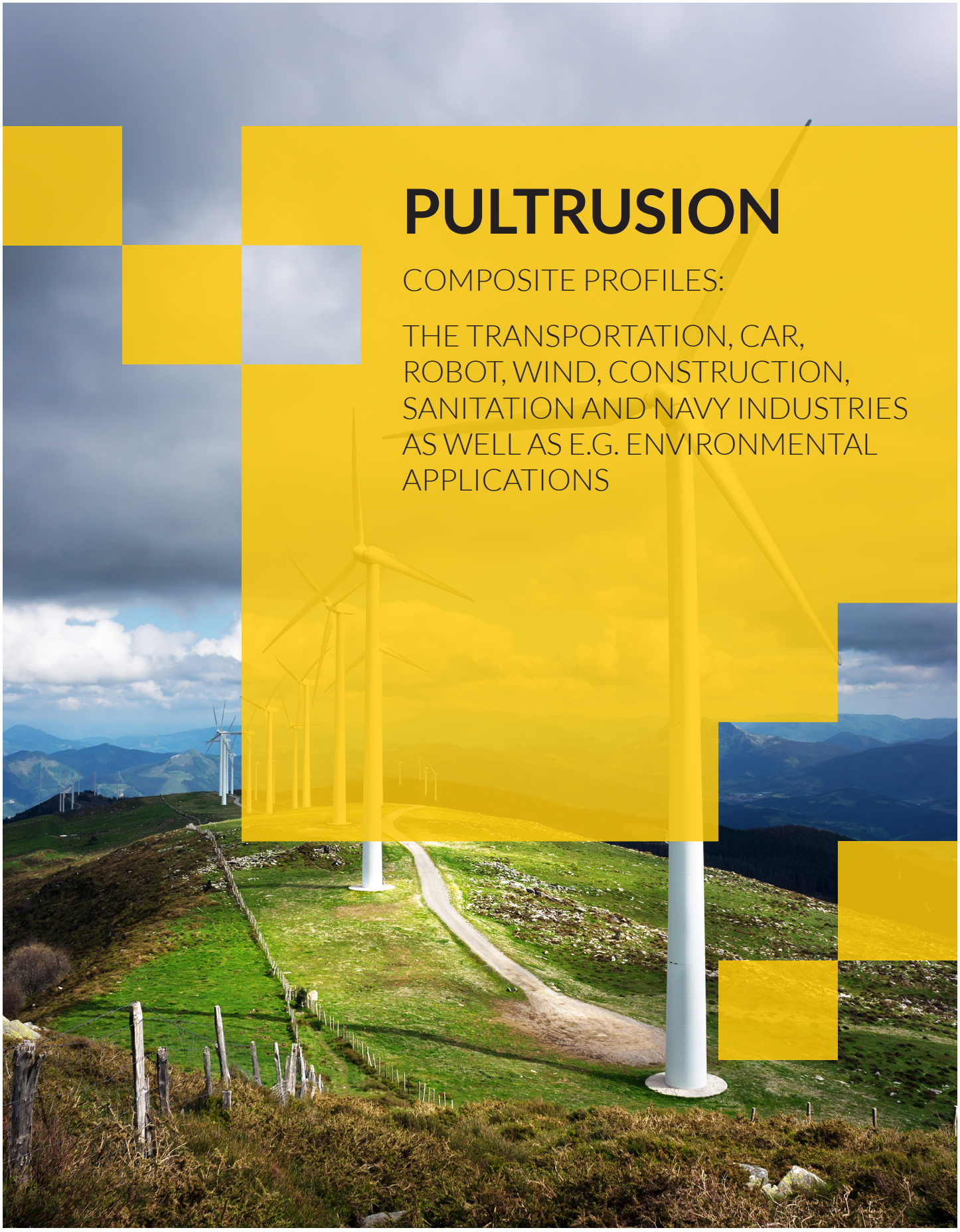


PULTRUSION

COMPOSITE PROFILES:

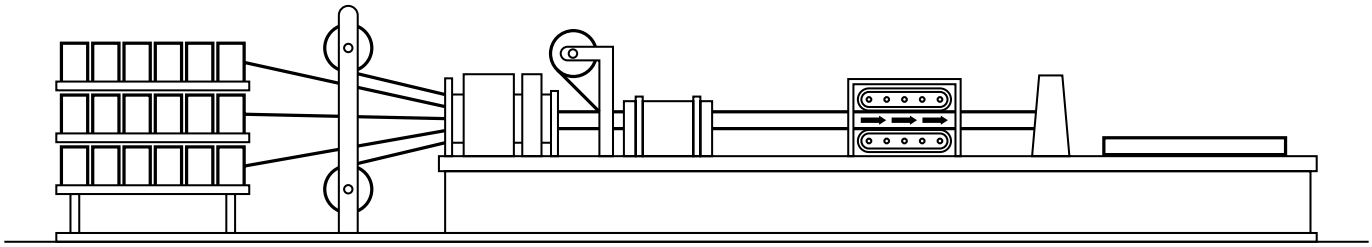
THE TRANSPORTATION, CAR, ROBOT, WIND, CONSTRUCTION, SANITATION AND NAVY INDUSTRIES AS WELL AS E.G. ENVIRONMENTAL APPLICATIONS

TINBY

WHAT IS PULTRUSION?

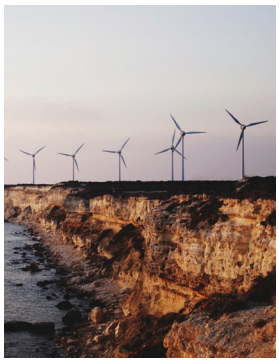
Pultrusion is a process whereby thick fibres are pulled continuously through a tool, which ensures that the threads generate the geometric cross-section desired for that particular profile. The fibres are impregnated with a resin, which then undergoes a thermosetting process, creating a solid, shaped profile, which can subsequently be sawn off into the desired lengths. The profile can be shaped and optimized during several stages in the process, e.g. according to the attributes of the material, which are primarily regulated through the type and number of fibre threads used. To put it simple pultrusion can be described as woven and reinforced fibre threads that are shaped into the geometry and strengths, which you need. The production method ensures consistent quality, which can be reproduced.

NB! Combining different types of resin treated fibres allows us to design the finished profile in the exact strengths and stiffness you desire, regardless of whether these items are to be used within the transportation, car, wind, construction, sanitation or navy industries; or it could be used for something completely different.



WHY TINBY?

1. As your Danish partner, we will guide you safely through all phases of the development, start-up and production in Latvia.
2. We have extensive know-how, experience and expertise, when it comes to pultrusion, and we are constantly developing the technology.
3. We participate actively in developing new products in collaboration with our clients, and we also provide project management as a general part of our partnership.
4. We deliver reliable quality - on time.
5. We work globally.
6. We are flexible, and we adapt to our clients' demands.
7. We offer customized solutions.
8. We are a solid company, supported by a strong group, SP Group A/S, and we have extensive expertise within the field of plastic manufacturing and finishing treatment.



Pultrusion can be used for e.g.:

1. Wind turbine items such as wing reinforcements, generator insulation, wing joints and cable conductors
2. Window and door profiles
3. Customized facades for houses and buildings
4. Landings, stairs, railings, structural items
5. Items for the navy industry (seawater resistant)
6. Environmental applications for handling of chemicals
7. Machine components and robots
8. Sports equipment like skis, snowboards and surfboards

WHAT ARE THE ADVANTAGES OF USING PULTRUSION?

As the final pultruded product is made of a composite material, i.e. a combination of different materials, one of the primary and most important advantages is that the items produced are much stiffer and stronger in relation to their density - compared to a large number of other materials. In many cases, plastic composites can thus replace materials such as aluminium, where, as we all know, continuous maintenance is a necessary evil. In comparison, composite items require only minimal maintenance. Other significant advantages offered by pultruded products are that the composites can be moulded or shaped into lightweight components that have a complex geometry, are lightweight and highly flexible. Due to the minimal maintenance involved, their high durability and longer lifetime, there are a lot of savings to be made when using Tinby's composite solutions.

The advantages of using composite profiles are, among others:

- High degree of stiffness and strength in relation to the density
- Could replace other materials such as aluminium
- Lightweight compared to materials with comparable attributes
- Requires minimal maintenance
- Durability and longer lifetime
- Resist tough weather conditions such as heat, sun, moisture and cold
- Poor carrier of cold, heat or electricity
- Highly resistant to seawater and most chemicals

VERSATILITY IS THE KEY IN OUR PRODUCTION HALLS

In addition to constantly developing pultrusion technology, Tinby also actively develops new products in collaboration with our clients. Therefore, we will be working closely with our clients at our Latvian plant to produce any type of profile they could possibly need, where a high degree of strength is required.

This is particularly relevant in the wind energy sector which requires materials with long lifespans, and that are extremely strong, hard-wearing and resistant to the weather conditions. Tinby's construction profiles fit the bill here, and live up to the stringent requirements that apply, making them the obvious choice for wind turbine elements for clients all over the world.

HOW CAN WE HELP YOU?

Do you have an idea or a specific profile, which you would like to discuss and/or need assistance to produce? Do not hesitate to contact our Sales & Project Manager, Michael Therkelsen, to make an appointment, and discuss how we may assist you in manufacturing your pultrusion profiles at our factory in Latvia.

We look forward to hearing from you!

Michael Therkelsen
Sales & Project Manager
mvt@tinby.dk
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WHO WE ARE

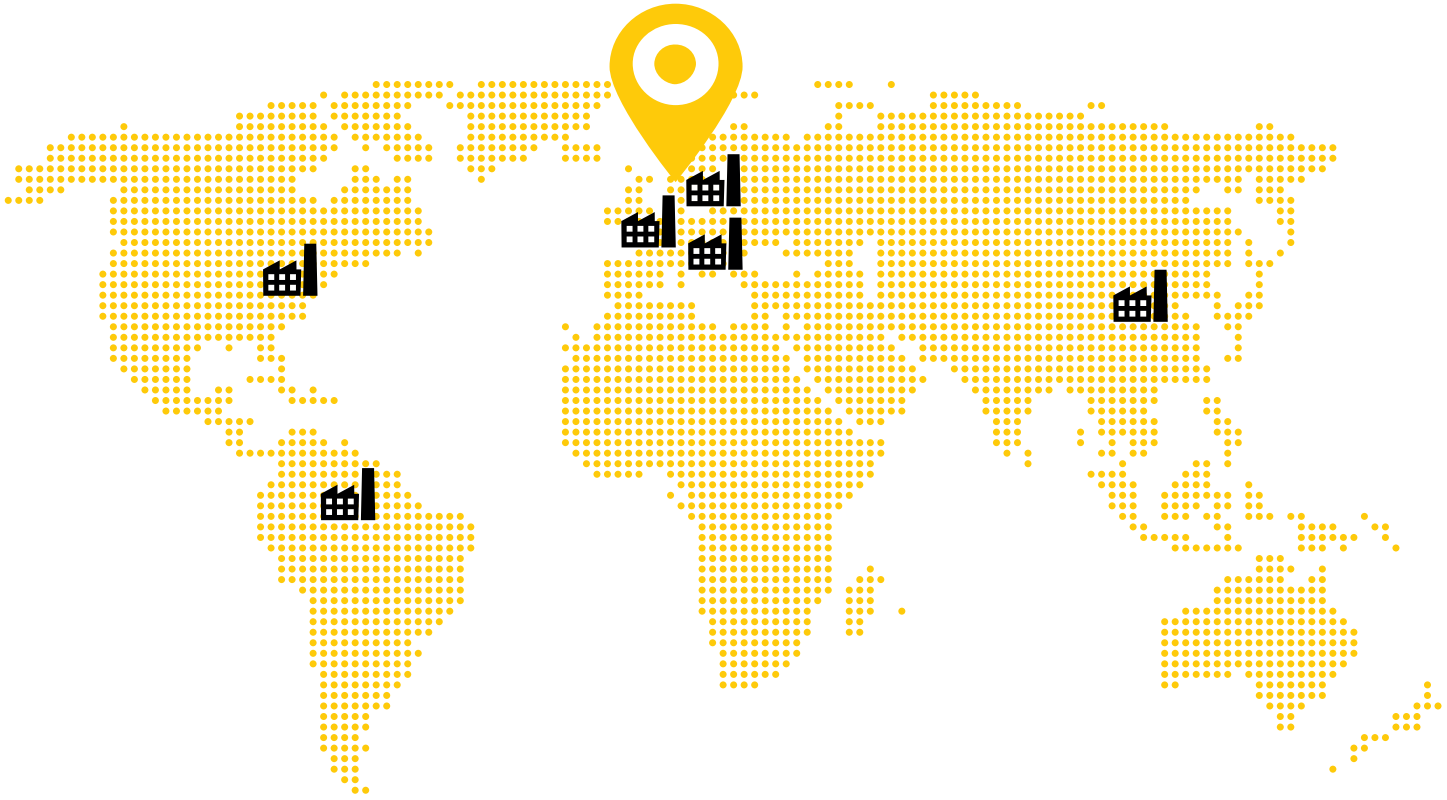
Since 1972 Tinby has been developing and manufacturing solutions in polyurethane. Our core competencies include moulding, surface treating and processing PUR products.

Tinby A/S is Denmark's largest supplier of PUR with factories in Denmark, Poland, China, Latvia and the USA, and our competencies stretch the length of the value chain from start to finish – from construction and development to manufacturing and distribution of components and complete systems.

We are a member of SP Group A/S.

SP GROUP A/S

HEAD OFFICE IN DENMARK
FOUNDED IN 1972



Marketing and sales
83
COUNTRIES

On average
1.994
EMPLOYEES

Production in
11
COUNTRIES

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