

**O'GEM & COMPOSITE TECH**

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## **FRP \ Basalt Mesh Production Line**











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# ABOUT US

**Composite Tech** is globally known for taking construction materials and production lines to the next level. We re-imagine existing and commonly used steel rebar and production methods in favour of reinforcement, cost and production effectiveness, quality and transportation benefits.

It is this that led us to creating **fiberglass and basalt rebar** manufacturing lines and for the **past 10 years** we have been perfecting this technology to the level of a turn-key solution.

Today, we supply our fiberglass/basalt rebar, mesh and bent elements production lines globally and make **the world of construction new age**, more secure and immune to affects of time and weather.





# PRODUCTION LINE

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# ABOUT LINE

Our **FRP Mesh Rebar production line** has been perfected over the course of the last 10 years and has now reached its peak product stage. Resultantly, we have achieved non-stop production process flow and made sure that it requires zero to none upkeep input, whilst producing a constantly **high quality of end product** at maximum output.

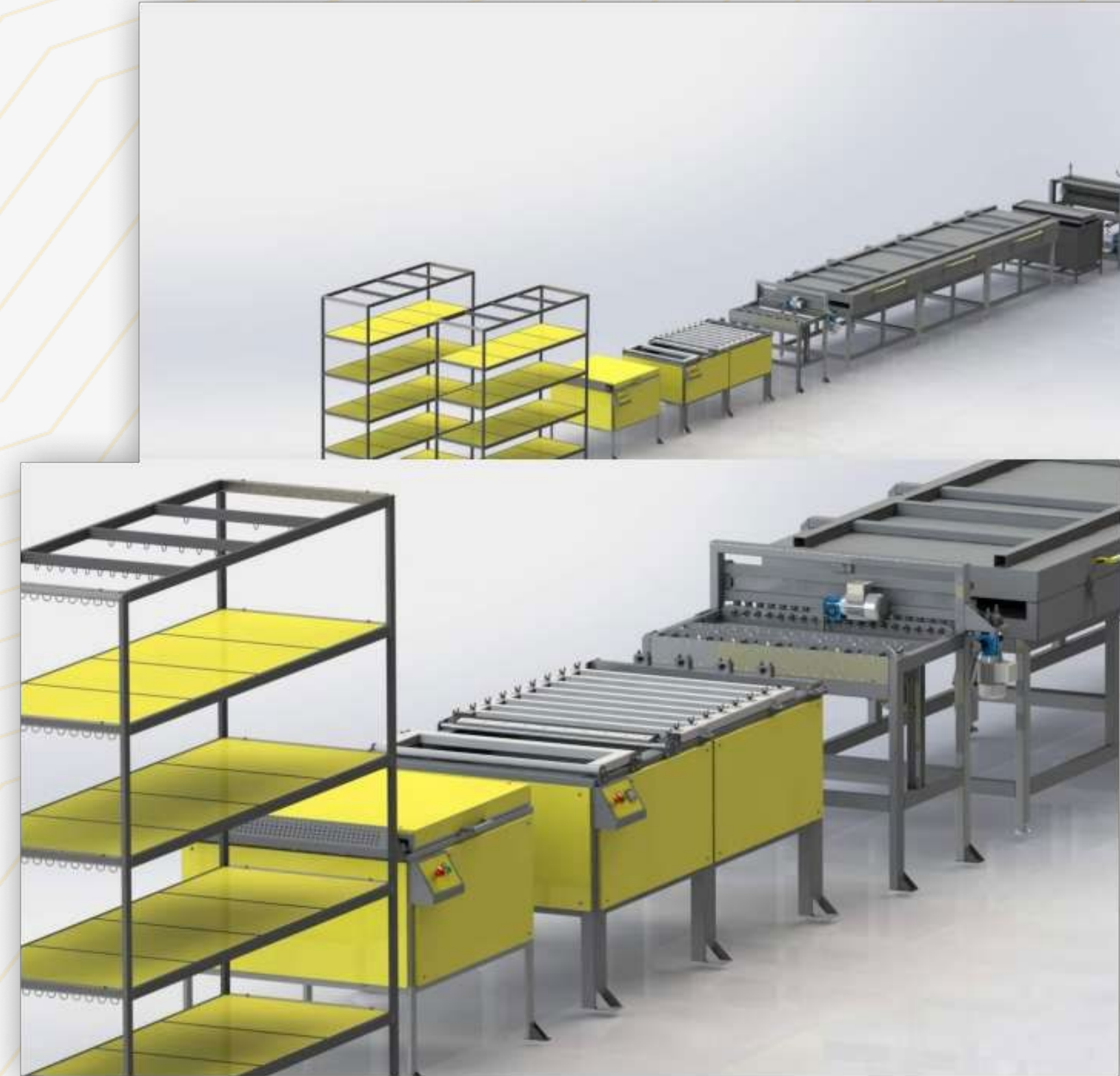
We manufacture 2 different types of FRP Mesh production lines:

## CT1M

outputs 1 meter wide mesh

## CT2M

outputs 2 meter wide mesh





# GENERAL SPECS

CT1M / CT2M has characteristics:

- Length-Width-Height: 18,5m -1.2m -1.8m / 28m - 2.4m - 1.8m
- Installation - **10 days** (executed by Composite Tech)
- End Product - **FRP or Basalt Mesh Rebar**
- Rebar diameter range: **2-6mm**
- Output per **8 hours** - **650m<sup>2</sup>** (3mm)
- Operators required - **2**
- 1000m of 10 $\varnothing$  = **153 kg**
- Raw materials - Polyester or **Epoxy Resin** and **Fiberglass/Basalt Roving**
- Electricity requirements - **24kW** (during first 10 minutes)
- Configuration - **Straight line only**





# INSTALLATION - ASSAMBLEY

Both **CTIM** and **CT2M** production lines are designed to be turn-key once the assembly is finished, which typically takes **10 working days** and we always send our representative to help with the installation process!

Our installation pack includes:

- Assembly on location
- Post assembly checklist
- Operation manual
- Online support and additional guidance (if required)



**START YOUR PRODUCTION IN JUST 2 MONTH!**



# FRP BASALT MESH

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# ABOUT PRODUCT

Technology development moves at a **never-ending pace** and it does not exclude construction materials. Composite-Tech FRP rebar is a result of a continuous development partnership with **world renowned building** institutes and serves as a benchmark of construction excellence.

We pride ourselves in achieving unmatched Rebar characteristics that boast **uncomparable quality** and outperform conventional steel rebar in every possible dimension.

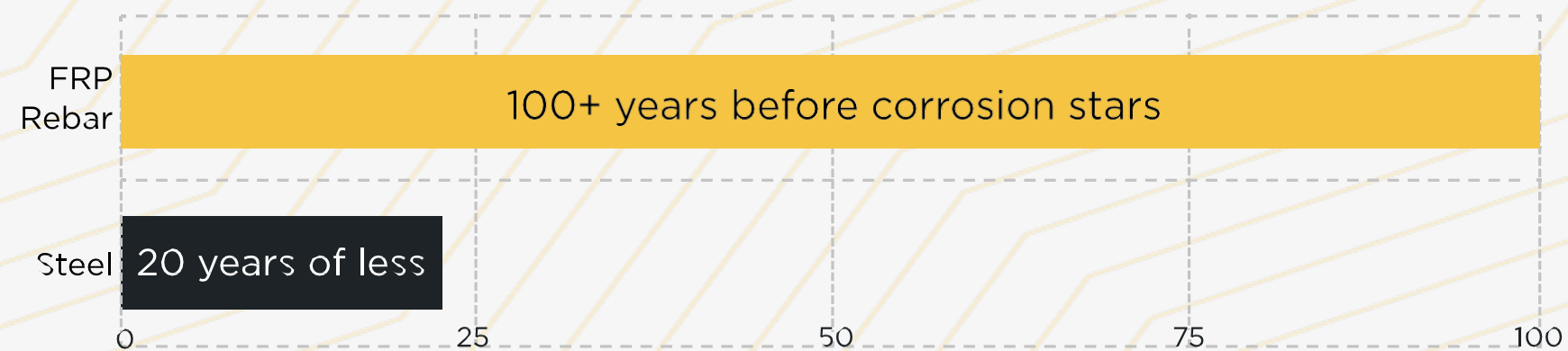




# BENEFITS

## 1 CORROSION RESISTANT

FRP rebar, mesh and bent do not rust and are immune to salt ions, chemicals and concrete inherent alkalines. This is important when you build concrete structures in coastal areas near seas, oceans, lakes and rivers. FRP is not affected by corrosion and this means that concrete won't crack as rebar will not expand like steel.



## 2 ZERO DECAY

FRP rebar eliminates cracks in the concrete blocks and consequent breaking of structure. Therefore, we extend life expectancy of the blocks and eliminate the need for refurbishment. Our tests show that concrete structures will remain intact for over 80 years without critical cracks and deformation of the structures that contain FRP rebar.

**80+ years** without needed injuries

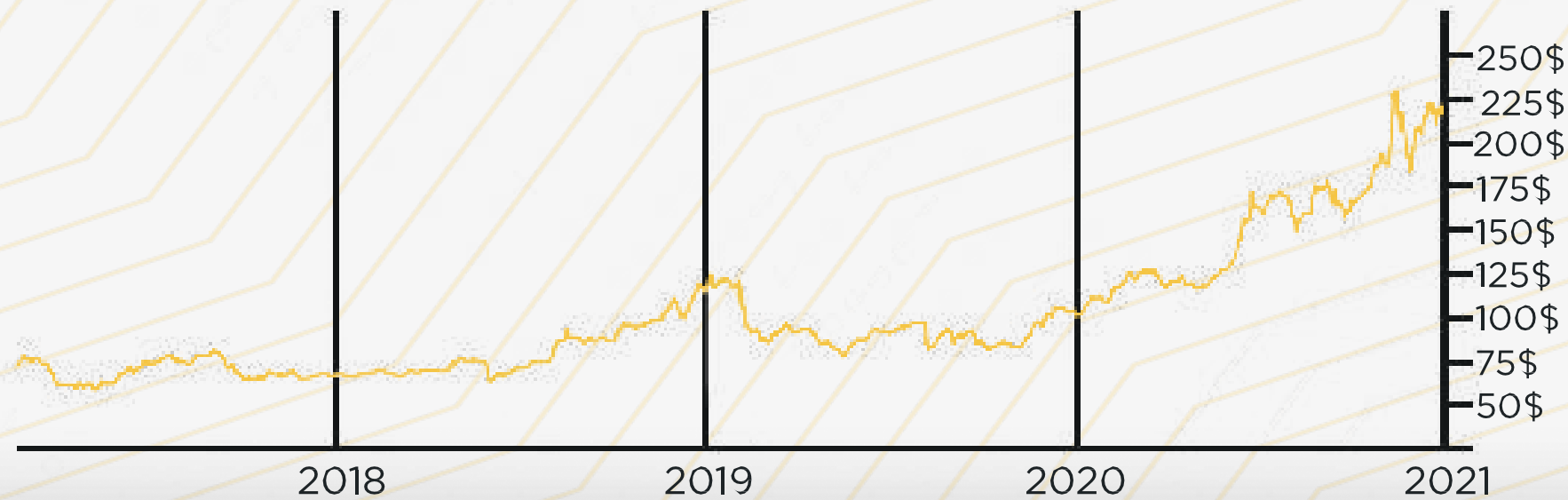


# BENEFITS

## 3 HIGH PRICE

Steel has doubled in price since mid 2020, whilst the general market suffers from constant fluctuations. This makes it hard to forecast your steel rebar production prices.

Opposingly, FRP Rebar raw materials have historically been decreasing in price and maintain a stable price behaviour.



## 4 STRENGTH / TEMPERATURE RESISTANT

The end product of our production lines withstands -70 to +150 degrees Celsius range of temperatures and is 5 times stronger than its steel counterpart.

# 5 times stronger

than steel counterpart



# BENEFITS

## 5 TRANSPORT DELIVERY

FRP rebar is over 5 times lighter than steel. This multiplication factor means that you can transport at least 5 times more FRP rebar using the same machinery and transportation techniques as with steel rebar. This then becomes an integral part of your cost and profitability calculations, decreasing these factors to minimum.

**1 FRP REBAR**

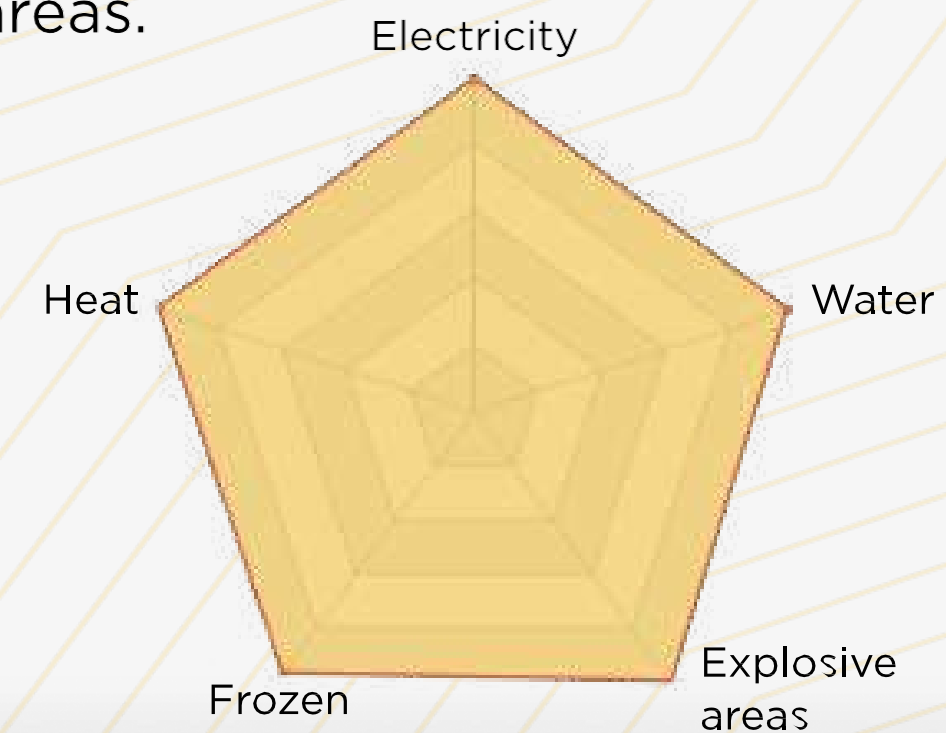
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**8 STEEL REBAR**

## 6 NON CONDUCTIVE

Dielectric in which induced currents are not generated. As a result, the use of rebar is in demand in conditions of increased requirement for electrical and explosion safety.

You can use rebar with water, sections of electricity, explosive areas.





# APPLICATION

Composite-Tech **FRP Rebar** offers unmatched benefits in following construction applications:

- All types of foundations
- Construction in sea water or in close proximity to it
- Concrete exposed to deicing salts (Roads, tunnels, bridges, etc)
- Weight sensitive structures
- Heat/cold sensitive environments (basements, patiodecks, heated floors, etc)
- Low electric conductivity mediums

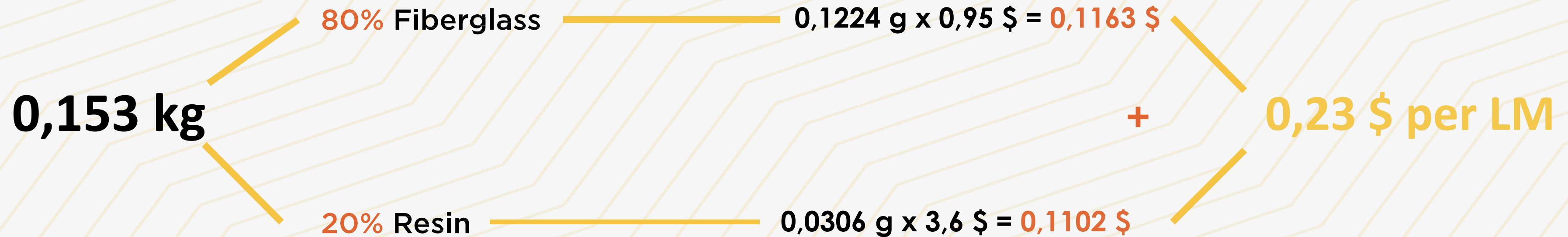




# END PRODUCT COST CALCULATION

FRP Rebar  $\varnothing 10$  is taken as an example

The weight of 1 m/l  $\varnothing 10$ mm = 0,153kg



Price:

Fiberglass - 0,95\$

Resin: 3,6\$



# PRODUCT USE



Metro Rail System, Ghent,  
Belgium, 2010



Maui Sea Wall, Hawaii, 2018  
Construction in progress



Cathedral de la Laguna in  
Tenerife Canary Islands, 2013



# RAW MATERIALS

Our **FRP/Basalt Rebar** is manufactured by using the Composite-Tech proprietary mix of the following **raw materials** that can be accessed globally:

**20%** Polyester or Epoxy Resin

**80%** Fiberglass or Basalt Fiber

**100%** Mixadditives (applied to resin)





# TECHNICAL DATA

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# PRICE

Production line price:

## CT1M

### By request

Turn-key production line includes assembly and operational guidelines, personnel training, warranty and support

## CT2M

### By request

**Included:**

**Payment** - 50% payable upon order placement, 50% payable upon start of delivery.

**Delivery** - Plant manufacturing takes 3 . months depending on demand. One container fits 1 production line

**Personnel training** - On location by our and support representative once the assembly is completed. (the price is determined by a separate contract)

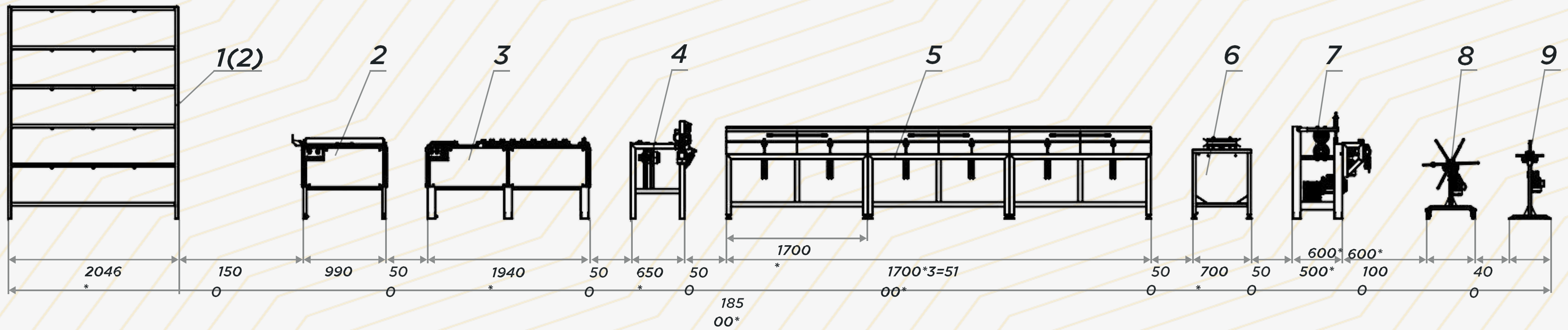


# PRODUCTION MODULES

№	Module name	Quantity
1	Spike	3 pcs
2	Preheat of rowing	1 pcs
3	Polymer impregnation bath	1 pcs
4	Transverse winding	1 pcs
5	Heat chamber	4 pcs
6	Air / water cooling unit	1 pcs
7	Broaching area	1 pcs
8	Cutting area	1 pcs
9	Winding area	1 pcs



# PRODUCTION DRAWING





# MACHINE PRODUCTIVITY

CT1M / CT2M line productivity:

Width end product - 1m/min

Mesh diameter - 2, 3, 4, 5, 6 mm

Cell size - 50x50, 100x100, 150x150, 200x200 mm

Packaging of end products:

Diameter 2, 3 - in a roll

Diameter 4, 5, 6 - in a sheets





# STEEL VS FRP

Specification	FRP Rebar	Steel Rebar
<i>Material</i>	Fiber glass, polyester resin	Steel
<i>Stretch resist. time</i>	1200 MPa	360 MPa
<i>Elastic modulus</i>	55000 MPa	200000 MPa
<i>Relative lengthening</i>	2,2%	25%
<i>Density</i>	1,9 t/m <sup>3</sup>	7 t/m <sup>3</sup>
<i>Corrosion resistance</i>	Stainless material of the first group of chemical resistance	Corroded with rust products
<i>Thermal conductivity</i>	Non-conductive	Heat conductive



# STEEL VS FRP

Specification	FRP Rebar	Steel Rebar
<i>Electrical conductivity</i>	Non-conductive	Electric conductive
<i>Produced diameters (mm)</i>	3-40	6 – 32
<i>Length</i>	Any length	6-12 m
<i>Durability</i>	Not less than 100 years	By building code





# STEEL VS FRP

Steel diameter	Breaking load	FRP Rebar	Breaking load
3ø		2	5 865 N
4ø		3	9 436 N
6ø	10 045 N	4	12 456 N
7ø		5	15 072 N
8ø	17 857 N	6	23 550 N
10ø	28 653 N	7	33 912 N
12ø	41 282 N	8	46 158 N
14ø	56 174 N	10	76 302 N



# STEEL VS FRP

Diameter	FRP weigth	FRP meters per ton	Steel weigth	Steel meters per ton
6	0,060 kg/LM	50 000	0,22 kg	4505
8	0,100 kg/LM	21 276	0,4 kg	2532
10	0,153 kg/LM	17 304	0,62 kg	1621
12	0,220 kg/LM	13 333	0,89 kg	1126
14	0,300 kg/LM	7 936	1,21 kg	826
16	0,392 kg/LM	5 917	1,58 kg	633
18	0,496 kg/LM	4 065	2 kg	500
20	0,612 kg/LM	2 272	2,47 kg	405
22	0,770 kg/LM	1 724	2,98 kg	336
25	1,062 kg/LM	1 370	3,85 kg	260



# PRODUCT & PRODUCTION LINE PHOTO

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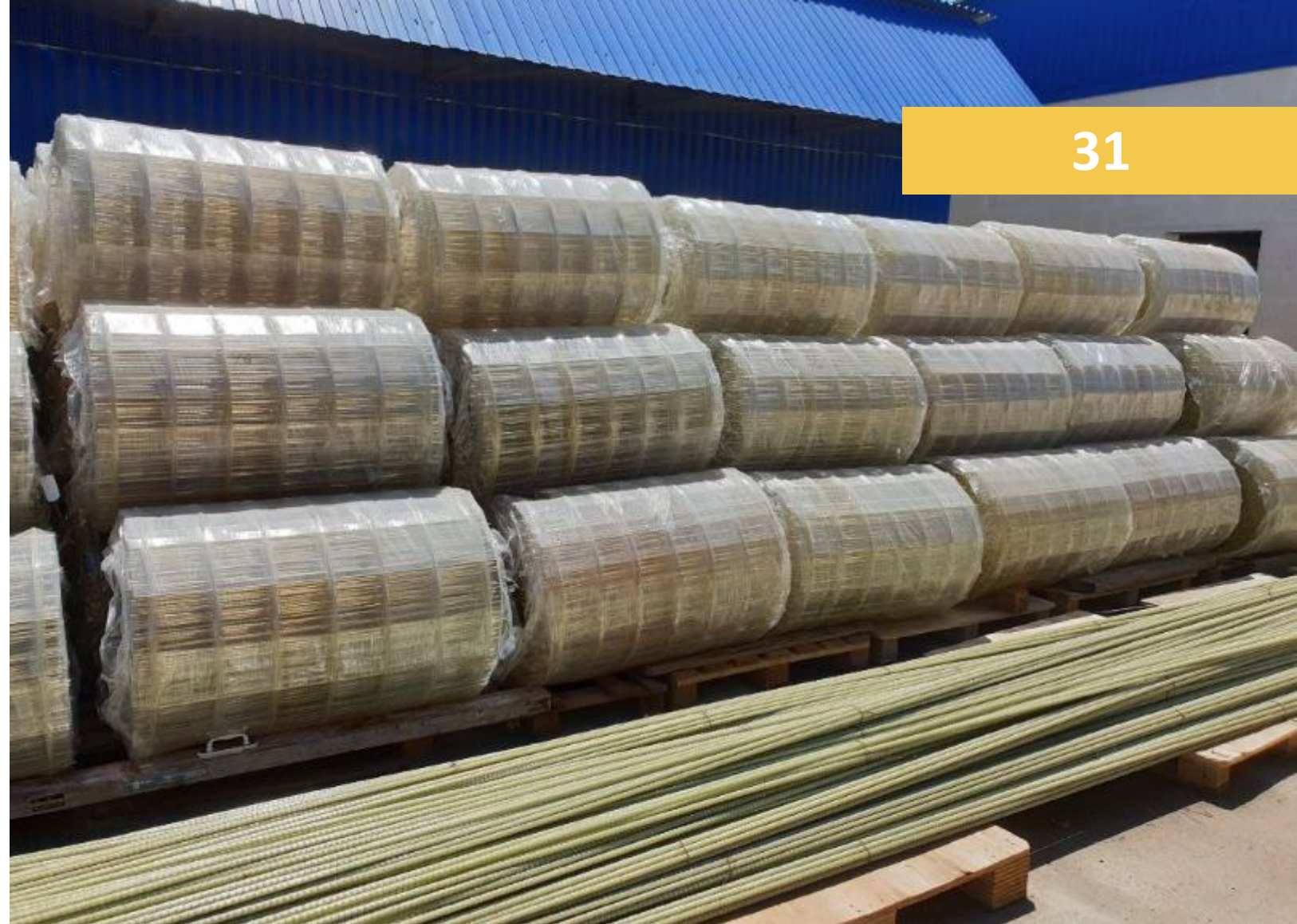












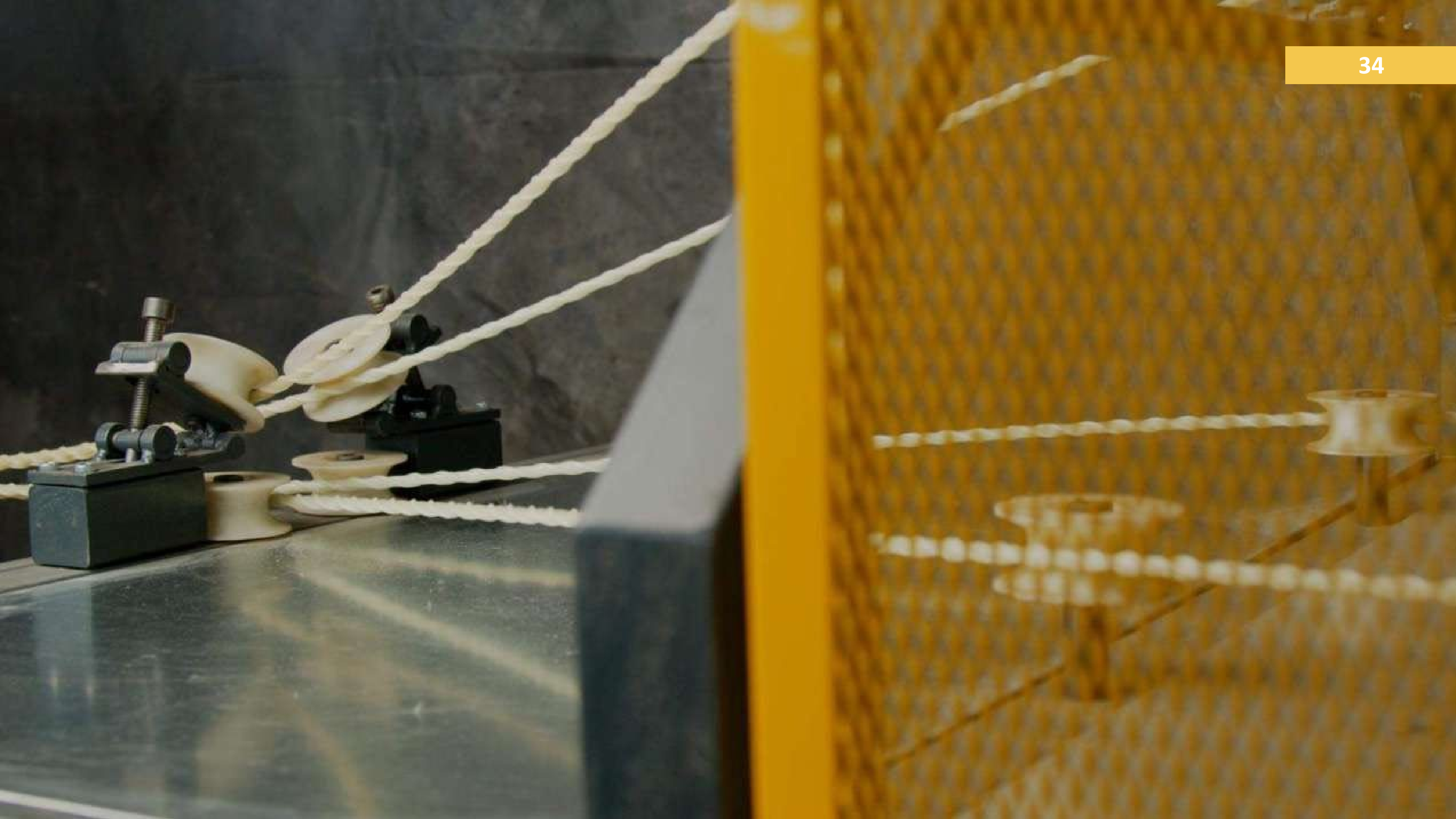
















































# OUR CONTACTS

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**Talk to us and start your production in a  
matter of 2 month!**