

SUSTAINABLE INNOVATION

Therpol and The 5th Industrial Revolution





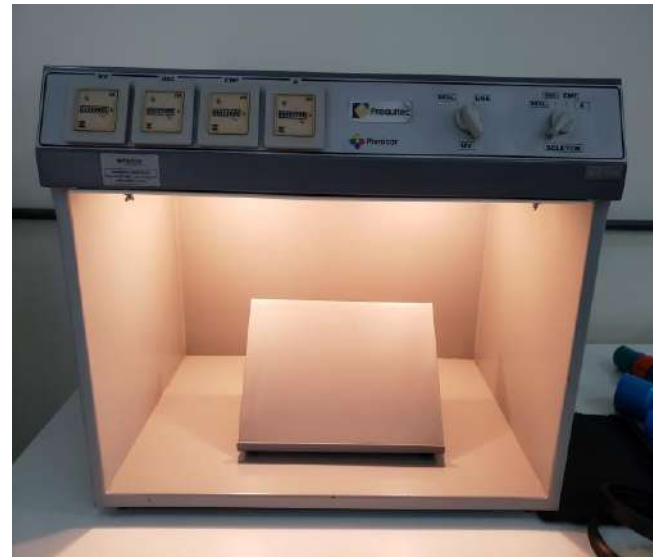
PROQUITEC S/A

- ESTABLISHED: 1977
- VARGEM GRANDE PAULISTA - SP
- EMPLOYEES: 85
- RUBBER AND PLASTIC CHEMICALS
- BLOWING AGENTS/ANTIOXIDANTSP/ DISSECANT/
PROCESSING AIDS/ANTIOZONANT WAX/AMMONIUM
HYDROXIDE/GREEN PLASTICIZER/THERPOL BIOPOLYMER
- CHEMICAL ADDITIVES SALES IN 2019: 7,000TON



PROQUITEC S/A

LABORATORY



PROQUITEC S/A

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LABORATORY

Who we are...



We were born on the great opportunity to reduce the rubber production costs by injecting the rubber in the same process of the plastics

More than 40 years experience in the Rubber and Plastic Industries and we have a dream to make the things in a different way

We developed The Revolutionary Technology THERPOL+ based on three pillars:

- a) Improving our ecosystem protection
- b) Promoting the Circular Economy and
- c) Getting savings for the worldwide markets

WHAT IS THE THERPOL + TECHNOLOGY?



SUSTAINABLE INNOVATION

Natural Rubber Thermoplastic from
Renewable-Bio Source raw material



LINK TO INCREMENTAL INNOVATION AND DISRUPTIVE

Improves the products properties and creates new products application thru + rubber appearance, + flexibility, + productivity, + Environmental Protection



T+

Improves Products and Trademarks Profits



WORLDWIDE INNOVATION

PATENT REQUIRED IN USA, COLOMBIA AND BRAZIL

“ The possibility to manufacture rubber as similar as the plastic injection process, using natural rubber or any other rubber as raw material”



Plastic modified by using the **Natural Rubber**



CIRCULAR ECONOMY



APP DESCARTE RÁPIDO



POTENTIAL MARKETS

Rubber

Shoes: Flip Flop Straps / Soles / Boots / Foamed Flip Flop Soles

Autoparts / Motoparts / Truckparts

Water pipeline Gaskets

Agro Rubber Goods

Mats

General Purpose Rubber Goods



POTENTIAL MARKETS

Plastics (Virgen and Recycled Resins)

PP: Beverage boxes and others, Tables, Chairs, Pallets, Agro, Toys, Packaging, Filters, Mats, Flip Packaging Cover, ...

PE: Fish boxes and others, Pallets, Health Care Toilet, Helmet, Toys, Pipes and Conectors, GP PE application

PS: Trays, Hangers, Seals, Combs, Electrical Breakers, ...

ABS: Toys, Autoparts, Furniture, Panels, Cellular, Appliances

PET: Packs, Covers and PCR

MARKETING STRATEGY

- **FOOTWEAR: OUTSOLES**
- **OUTSOLES: Good Abrasion (150mm³), Rubber Finishing, Good Flexibility (>100,000 cycles), Good Grip, Solvent Resistant**
 - **New Thermoplastic Technology based on Bio Raw Material (Natural Rubber)**
 - **100% Recyclable**
 - **No Virgin Raw Material Required during the Recycling Process**
 - **Easy Coloured**



MARKETING STRATEGY



SANDALS STRAPS

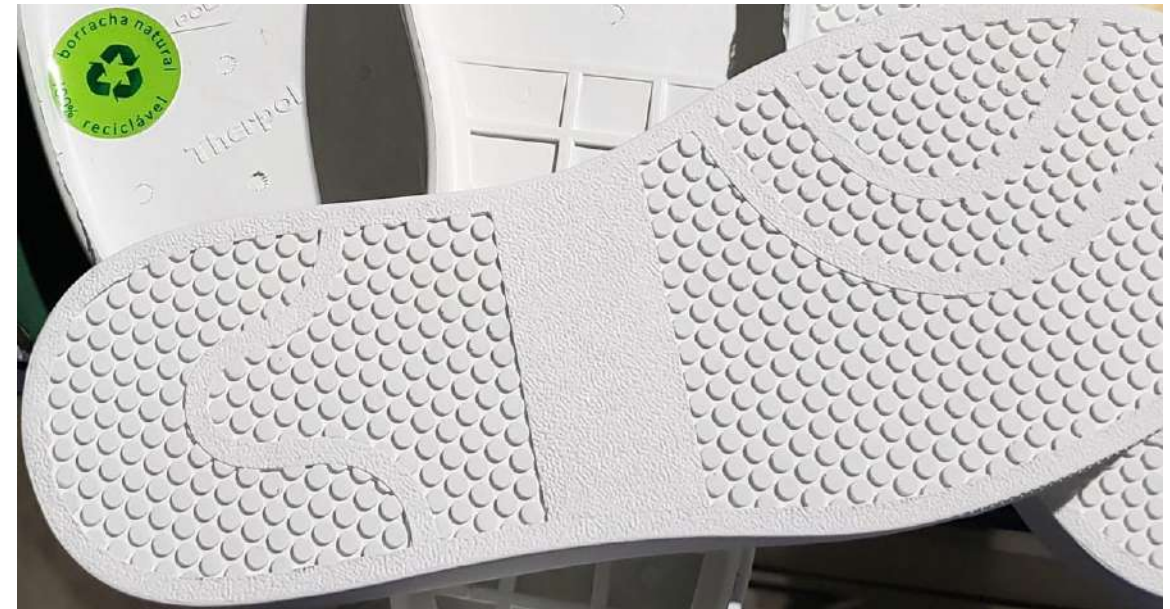
- PVCFREE
- 30% LIGHTER THAN PVC/TPU
- 100% Recyclable
- No Virgin Raw Material Required during the Recycling Process
- High Mechanical Properties (>20MPa and >800% Elongation)
- Vegan



THERPOL FOR FOOTWEAR OUTSOLES

	STANDARD TPR	THERPOL SL70
Hardness Shore A (Pts)	70	70
Density (g/cm ³)	1,00~1,05	1,04
Abrasion (mm ³)	250	180
Flexion (Cycles)	30,000	>100,000

Therpol Footwear Outsoles 100% RECYCLABLE





100% FOOTWEAR RECYCLABILITY INCLUDING
FABRICS, RUBBER OUTSOLE AND EVA BY
USING THERPOL



THERPOL
TRUCK BUSHINGS

TRUCK BUSHINGS

REPLACES TPU

HARDNESS 90 PTS SHORE A

HIGH DYNAMIC PERFORMANCE

WEATHER RESISTANT

30% LIGHTER THAN TPU

> 150.000 KM TESTED

100% RECYCLABLE WITHOUT ADDING VIRGEN RAW MATERIAL DURING THE RECYCLING PROCESS



AUTOPARTS
CIRCULAR ECONOMY

RECYCLED PP + THERPOL



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RECYCLED PP + THERPOL

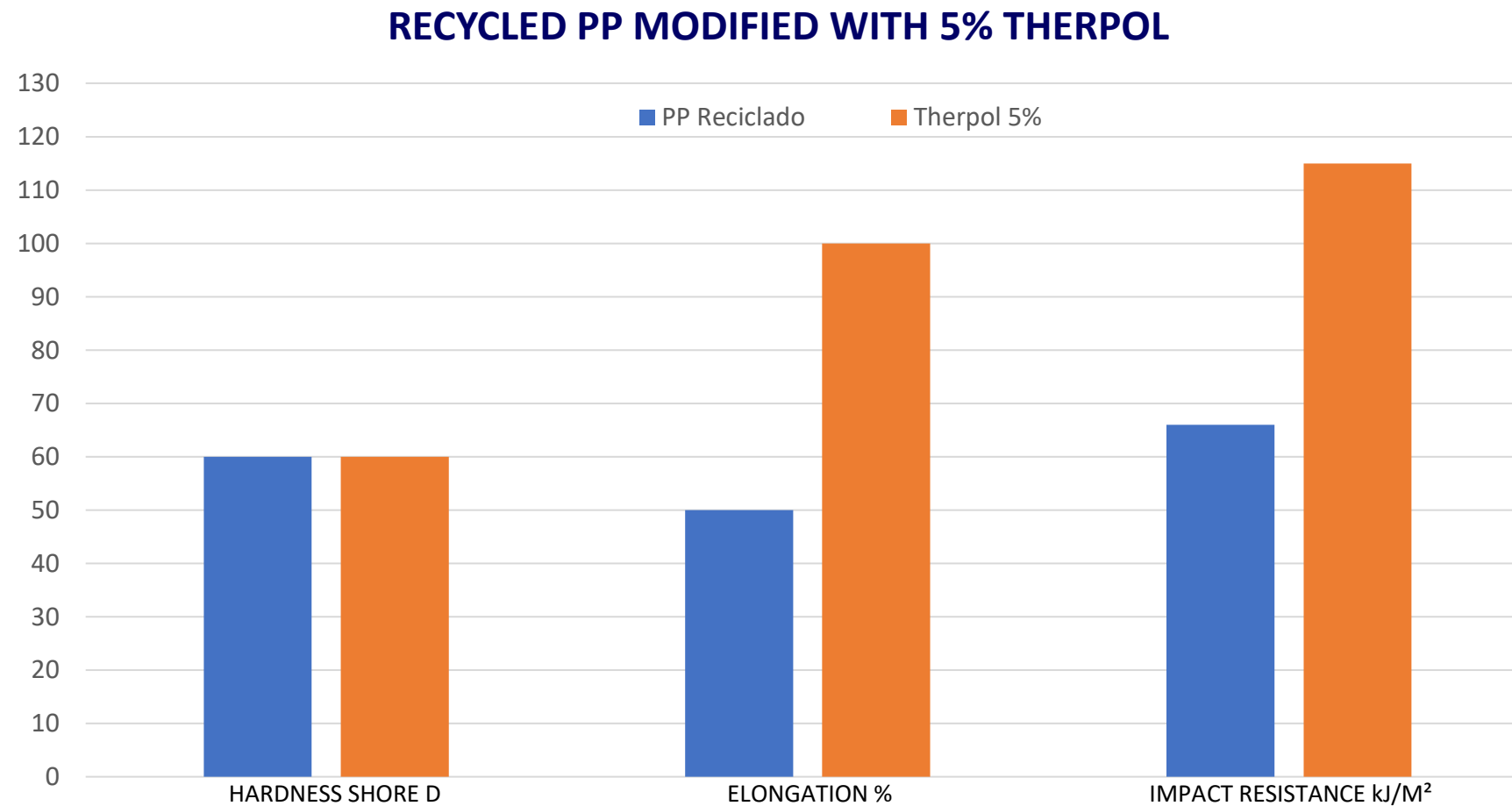


**THERPOL IMPROVES HIGH FLEXIBILITY
AND IMPACT RESISTANCE FOR PLASTICS**



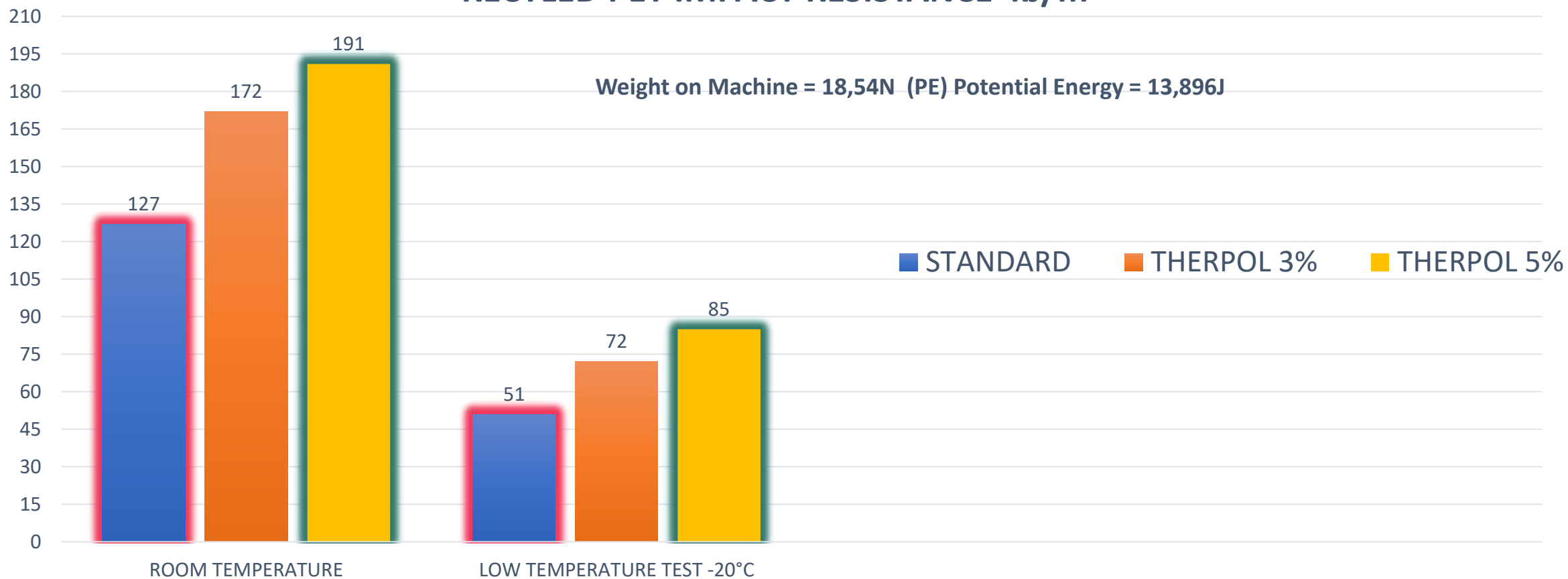
CASE: THERPOL IN PP
CREPINAS (FILTERS)
CLOSED LOOP

THERPOL PERFORMANCE TO RECYCLED POLYPROPYLENE (FISH BOXES)

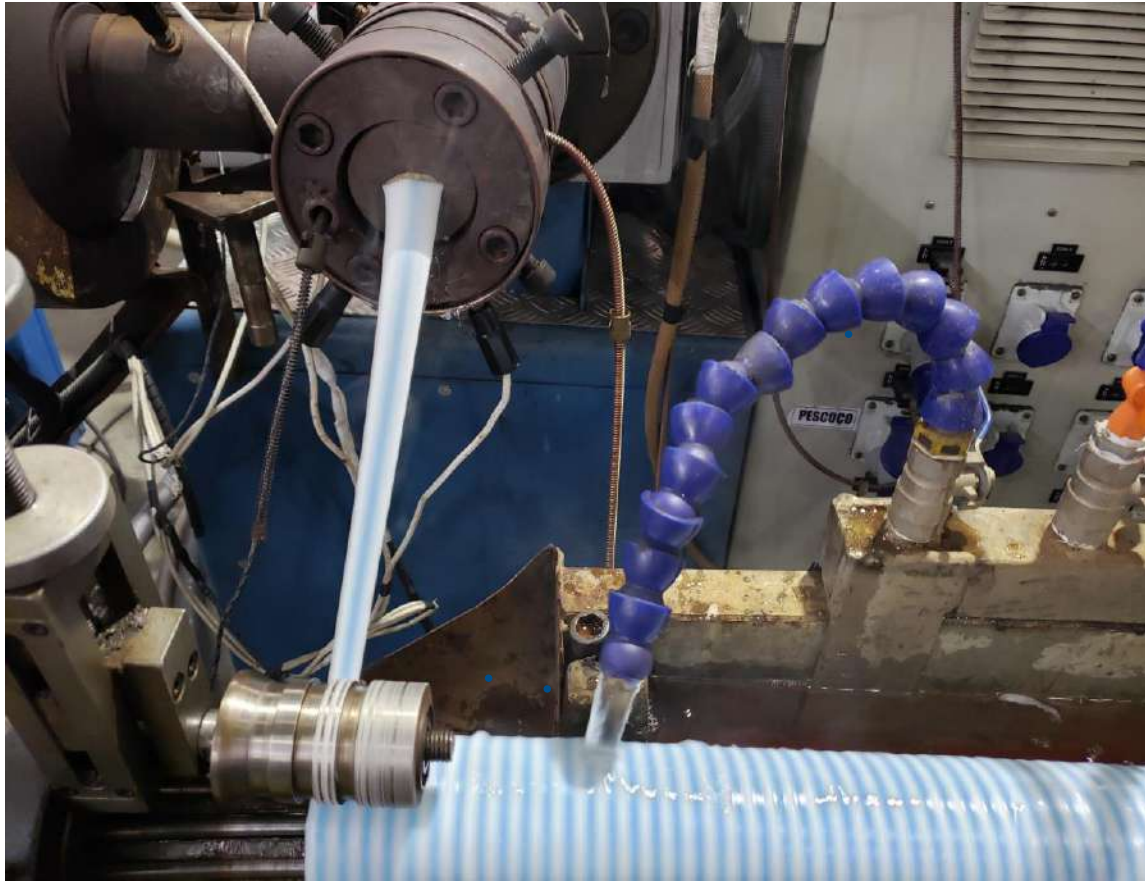




RECYLED PET IMPACT RESISTANCE kJ/m^2



THERPOL HOSES





CASE: SCRAPERS DEVICE FOR SUGAR CANE MILLS

**POLYPROPYLENE + THERPOL REPLACES POLYAMIDE 66
(NYLON66) FOR $<130^{\circ}\text{C}$ WORKING TEMPERATURE**

THERPOL ENHANCE HIGH GRIP AND ABRASION RESISTANT TO THE POLYPROPYLENE



THERPOL IMPROVES (GRIP) AND REPLACES TPE



CASE: MOTORCYCLE ABS BODY PARTS

RECYCLED ABS + 5% THERPOL

THERPOL IMPROVES FLEXIBILITY FOR THE RECYCLED ABS

WE OFFER T⁺

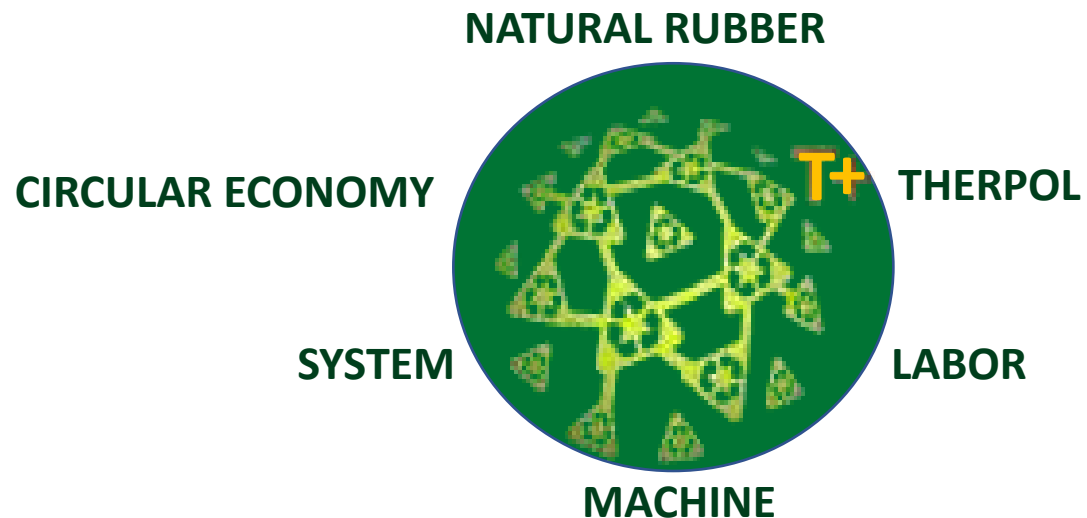
- CIRCULAR ECONOMY MODEL

↓↓↓ less ENERGY less WASTE less POLLUTION

↑↑↑ more JOBS more BIORAW MATERIAL more WORTH

WE OFFER T⁺

- 5th INDUSTRIAL REVOLUTION: LABOR – MACHINE – SYSTEM (IT)
- THERPOL ATTENDS THE INDUSTRIAL REVOLUTION + SUSTAINABILITY BY CIRCULAR ECONOMY



THERPOL⁺BIOINNOVATION



THE 5TH INDUSTRIAL REVOLUTION HAS JUST STARTED



www.therpolinnovation.com.br

vendas@proquitec.com.br