



**BUS & COACH  
TRUCK & TRAILERS  
TRAIN & CARRIAGE  
RECREATIONAL VEHICLES**

**COMMERCIAL & INDUSTRIAL  
TRANSPORTATION**

***SEALING & BONDING SOLUTIONS***

# ELASTIC BONDING TECHNOLOGY

## *The innovative solution*

Over the past decade, the scenario and competitive market logics have changed profoundly. The evolution has deep roots in changing both economic thinking and social needs. It is precisely from the Automotive & Transportation sector that the most consistent evolutionary needs arise.

The continuing need to experiment with new, higher-performance, lower-impact materials with a greater focus on aesthetics and design have prompted NPT to invest in the latest generation of elastic bonding technologies. Since its inception, NPT has based its value proposition on chemical research, aimed at producing innovative products with high quality and performance. All this having as a fundamental driver the ability to give added value and differentiation to its partners and customers.

## MARKET NEEDS & REQUIREMENTS



### WEIGHT & EMISSION REDUCTION

Globally, the marketplace is demanding that operators make an effort to help to reduce emissions. This is pushing manufacturers to increasingly look for assembly technologies that will help them reduce energy and fuel consumption by making more efficient and lighter vehicles.



### MANUFACTURING EFFICIENCY & COST REDUCTION

While the push for lower environmental impact solutions is one of the main market drivers, it is equally important to provide bonding solutions capable of reducing production costs and increasing production efficiency. This is in order to ensure competitiveness in the end market, reduce the risk of mistakes and speed up production steps.



### PERFORMANCE IMPROVEMENT

The constant focus on safety in the world of transportation is driving manufacturers to seek assembly solutions through the use of products that are mechanically high-performing and compatible with integrated electronic systems. At the same time able to increase vehicle safety by becoming themselves an integral element as well as providing greater durability.



### TOTAL QUALITY & SAFETY

Quality and safety are not only synonymous of performance and environment, but part of the “total quality” concept. This drives the chemical industry and producers toward the constant search of greater safety for both workers and end users. This is why new technologies involve an increasingly less invasive solutions to occupational health and safety.

## NPT SOLUTION - A COMPLETE RANGE FOR ALL APPLICATIONS

Driven by such needs for performance, environmental sustainability, safety, as well as attention to production costs, NPT has created a wide and comprehensive range of adhesives and sealants to support its customers and partners in the global transportation world to meet their needs and reach their target. Today, NPT is able to offer applicative solutions based on different chemical families giving the possibility to cover all application needs in industrial and commercial transportation where they use adhesives and sealant is required.

# PU

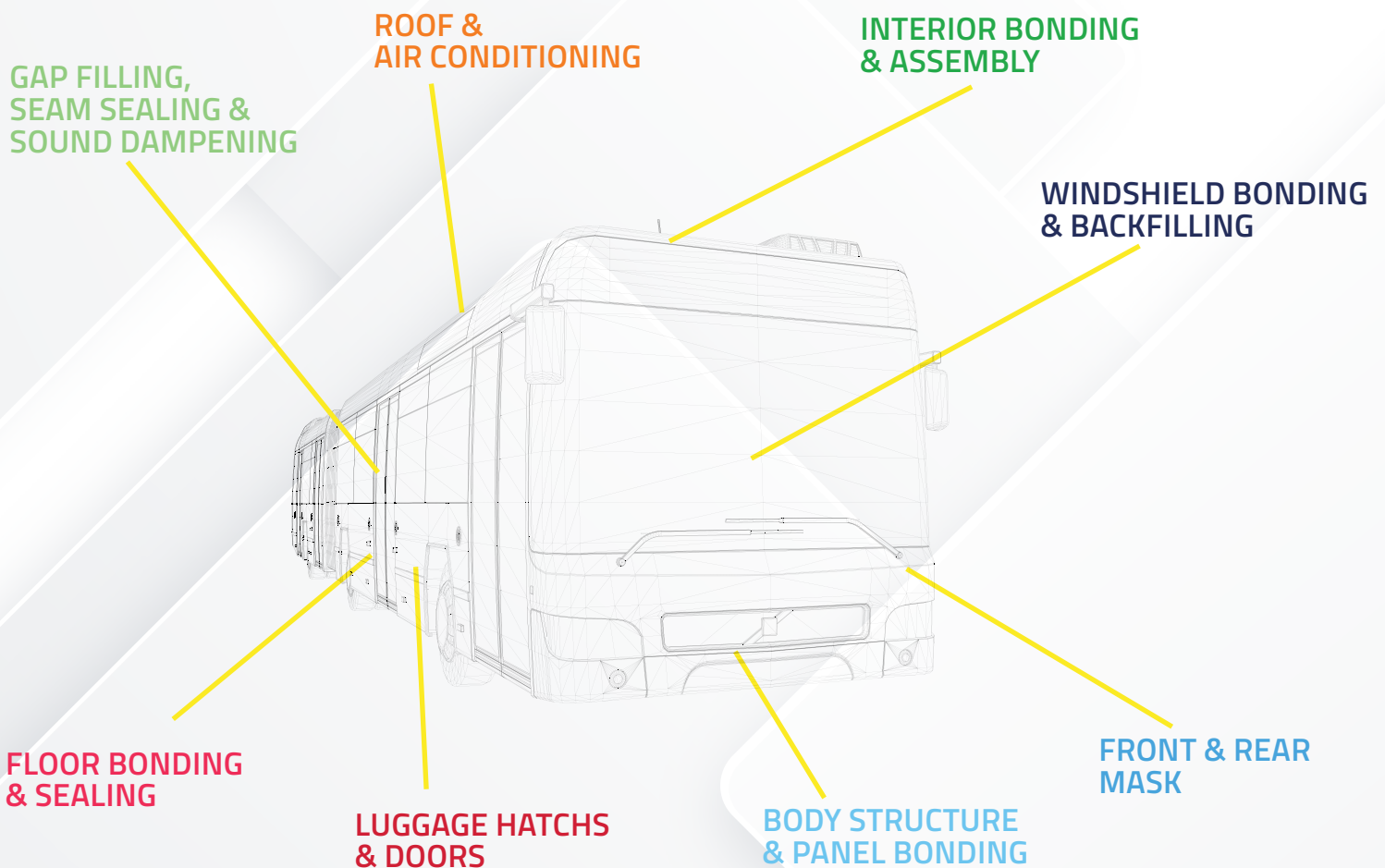
U-Seal range, the one-component Polyurethane, established and recognized as indispensable technology for their exceptional performance and versatility in the industrial assembly of buses, trains, trailers and special vehicles.

SiMP Tech, with **SiMP-Seal** products are the new technological frontier that combines high performance with its prerogatives of low environmental impact, total quality and construction needs.



The new generation of silane adhesives and sealants for elastic structural bonding that combines the advantages of hybrid and polyurethane adhesives and sealants in a single solution. **SiMP Advanced** technology offers a unique blend of elasticity, adhesion and durability, making it ideal for a wide range of applications.

Moreover, NPT technological offer went beyond offering its **Booster paste system** in conjunction with our one-component adhesives and sealants, offering the following advantages as faster curing; Booster paste speed up the curing process meaning that the adhesive or sealant will dry and cure more quickly and through the whole volume, reducing the overall production time and allowing for faster assembly or application of the bonded parts.





# WINDSHIELD BONDING & BACKFILLING

When it comes to securing and sealing front screens and bonding glass components, the adhesive and sealant properties are critical. **U-Seal** and **SiMP-Seal** elastic adhesives and sealants excel in providing high-strength bonding, ensuring the stability and integrity of the glass components. Their excellent resistance to environmental factors such as temperature variations and moisture helps maintain a reliable and long-lasting seal, preventing water leakage and potential damage to interior components. In addition our **SiMP Advanced** and booster paste technology represent an ultimate solution to fasten the applicative times guaranteeing outstanding performances.

## FEATURES & BENEFITS

- Enhance torsional rigidity of vehicles and contribute to the general comfort
- Reduce assembly costs through process optimization and weight reduction
- Sound and vibration damping
- Guarantee protection toward water and moisture penetration
- Booster application speeds up the process
- Smooth finishing is given in visible joints
- Bonding of different materials



## RECOMMENDED PRODUCTS

<b>SiMP Advanced 70 UP</b>	Ultra high decking, P2G 1K Advanced SiMP windshield & assembly adhesive
<b>SiMP-Seal 60 HV</b>	High decking, fast curing, P2G 1K SiMP windshield & assembly adhesive
<b>U-Seal 208 BTR</b>	High viscosity 1K PU windshield & assembly adhesive. High UV resistant
<b>U-Seal 207 Plus</b>	Multipurpose 1K PU windshield & assembly adhesive
<b>U-Seal 201 Fast</b>	Fast curing 1K PU windshield & assembly adhesive
<b>U-Seal 204 Speed</b>	High decking, fast curing 1K PU windshield & assembly adhesive
<b>G+S Cleaner</b>	Highly effective solvent free foaming professional cleaner
<b>Cleaner E</b>	Professional industrial cleaner and remover. Heptane based
<b>Activator 440 W</b>	Adhesion promoter for ceramic frit and glass
<b>U-Primer 130</b>	Black, moisture curing, one-step glass primer
<b>U-Primer 135</b>	Black, moisture curing, one step glass primer, high UV resistant

# FRONT & REAR MASK

The continuative material innovation in transportation industry has introduced the use of new composite and plastic materials; more durable, lighter and able to satisfy design purposes. Especially the rear and front mask application becomes a crucial part of such trend. For this reason they require a secure and durable bond. **U-Seal** and **SiMP-Seal** elastic adhesives and sealants offer exceptional adhesion to various materials, such as plastic, metal, and composites, providing a reliable bond of the parts to the vehicle body. Their resistance to vibrations and impact helps maintain the integrity of the bond, ensuring the front and rear mask remains securely in place even under harsh operating conditions.

## FEATURES & BENEFITS

- Contribute to the integral stability of the vehicle reducing dynamic stress and fuel consumption
- Sound and vibration damping
- Guarantee protection toward water and moisture penetrations
- Adhesives avoid damage to corrosion protection treatments
- Smooth finishing is given in visible joints
- Booster application speeds up the process



## RECOMMENDED PRODUCTS

**SiMP Advanced 70 UP**

Ultra high decking, P2G 1K Advanced SiMP windshield & assembly adhesive

**SiMP-Seal 57 HT**

High decking, primerless 1K SiMP elastic assembly adhesive

**SiMP-Seal 650**

Universal high UV, weathering and temperature resistant, 1K SiMP elastic adhesive & sealant

**SiMP-Seal 55**

Multipurpose, wide spectrum of adhesion, 1K SiMP elastic adhesive & sealant

**U-Seal 207 Plus**

Multipurpose 1K PU windshield & assembly adhesive

**Cleaner E**

Professional industrial cleaner and remover. Heptane based

**Activator 400 NP**

Adhesion promoter for non-porous substrates

**U-Primer 130**

Black, moisture curing, one-step glass primer

**U-Primer 135**

Black, moisture curing, one-step glass primer, fast curing

# BODY STRUCTURE & PANEL BONDING

In the assembly of industrial and commercial vehicles is paramount to ensure the structural integrity of the body components. **U-Seal** and **SiMP-Seal** elastic adhesives and sealants provide robust bonding and sealing properties, allowing the secure attachment of body structure to the various components of the vehicles. Their high bond strength, resistance to vibrations and durability contribute to the overall stability and longevity of the vehicle's body structure, maintaining passenger comfort and safety. These processes enhance structural integrity, durability and resistance to environmental factors, making them vital for the safety and performance of vehicles.

## FEATURES & BENEFITS

- Reduce assembly costs through process optimization and weight reduction
- Sound and vibration damping
- Booster application speeds up the process
- Continuous bonding provides improved structure stability
- Reduction of weight grants potential fuel consumption reduction
- Adhesives avoid damage to corrosion protection treatments
- Bonding of different materials



## RECOMMENDED PRODUCTS

### **SiMP Advanced 70 UP**

Ultra high decking, P2G 1K Advanced SiMP windshield & assembly adhesive

### **SiMP-Seal 57 HT**

High decking, primerless 1K SiMP elastic assembly adhesive

### **SiMP-Seal 650**

Universal high UV, weathering and temperature resistant, 1K SiMP elastic adhesive & sealant

### **SiMP-Seal 55**

Multipurpose, wide spectrum of adhesion, 1K SiMP elastic adhesive & sealant

### **U-Seal 550 FC**

High thixotropy, fast curing, 1K PU elastic adhesive & sealant

### **U-Seal 207 Plus**

Multipurpose 1K PU windshield & assembly adhesive

### **U-Bond Ultra 2K Assembly**

High strength, structural 2K PU adhesive for metal and plastic

### **Cleaner E**

Professional industrial cleaner and remover. Heptane based

### **Activator 400 NP**

Adhesion promoter for non-porous substrates

### **U-Primer 130**

Black, moisture curing, one-step glass primer

### **U-Primer 135**

Black, moisture curing, one step glass primer, fast curing



# GAP FILLING, SEAM SEALING & SOUND DAMPENING

**U-Seal** and **SiMP-Seal** elastic adhesives and sealants are largely use in gap filling, seam sealing and sound dampening applications within the assembly process. They become an integral part of the vehicles, preventing the ingress of water, dust and noise. Their flexibility, elasticity and resistance to environmental conditions ensure long-term performance and durability, contributing to enhanced comfort, insulation and noise reduction within the vehicle.

## FEATURES & BENEFITS

- Guaranteed a long term barrier to water and moisture
- Bonding of different materials
- Smooth finishing is given in visible joints
- High vibration resistance in exposed joints
- Booster application speeds up the process



## RECOMMENDED PRODUCTS

### **SiMP-Seal 650**

Universal high UV, weathering and temperature resistant, 1K SiMP elastic adhesive & sealant

### **SiMP-Seal 55**

Multipurpose, wide spectrum of adhesion, 1K SiMP elastic adhesive & sealant

### **SiMP-Seal 630**

Multipurpose, sprayable, 1K SiMP elastic adhesive & sealant

### **U-Seal 550 FC**

High thixotropy, fast curing, 1K PU elastic adhesive & sealant

### **Cleaner E**

Professional industrial cleaner and remover. Heptane based

### **Activator 400 NP**

Adhesion promoter for non-porous substrates

# INTERIOR BONDING & ASSEMBLY

Safety, comfort and design are distinctive elements in vehicles construction; desired by manufacturers and more and more requested by legislation, the improvement of internal bonding and sealing have become crucial applications. **U-Seal** and **SiMP-Seal** elastic adhesives and sealants provide reliable adhesion between different materials, such as plastics, painted surfaces and metals. This ensures the durability and a nice esthetical result of the interior components, enhancing the overall quality, safety and appearance of the vehicle's interior.

## FEATURES & BENEFITS

- Bonding of different materials
- Smooth finishing is given in visible joints
- Invisible bonding provides material continuity and enhanced aesthetic
- Elasticity gives improved protection and higher occupant safety
- Reduce assembly costs through process optimization and weight reduction



## RECOMMENDED PRODUCTS

### **SiMP-Seal 57 HT**

High decking, primerless 1K SiMP elastic assembly adhesive

### **SiMP-Seal 650**

Universal high UV, weathering and temperature resistant, 1K SiMP elastic adhesive & sealant

### **SiMP-Seal 55**

Multipurpose, wide spectrum of adhesion, 1K SiMP elastic adhesive & sealant

### **U-Seal 550 FC**

High thixotropy, fast curing, 1K PU elastic adhesive & sealant

### **U-Bond 301**

One-part liquid PU adhesive for wood and panel bonding

### **U-Bond Ultra 2K Assembly**

High strength, structural 2K PU adhesive for metal and plastic

### **G+S Cleaner**

Highly effective solvent free foaming professional cleaner

### **Cleaner E**

Professional industrial cleaner and remover. Heptane based

### **Activator 400 NP**

Adhesion promoter for non-porous substrates



# LUGGAGE HATCHES & DOORS

For luggage, hatches and doors, a strong bond and effective sealing are crucial to ensure their proper functioning and weather resistance, this especially when the application is related to parts subjected to continuative mechanical movements and expose externally. **U-Seal** and **SiMP-Seal** elastic adhesives and sealants offer excellent adhesion to different materials, including metal and plastics and providing a reliable bonding. Their resistance to moisture, temperature changes and mechanical stress ensures a durable seal, preventing water penetration and maintaining the overall integrity of the vehicle.

## FEATURES & BENEFITS

- Continuous bonding provides improved structure stability
- Easy workability and processing
- High vibration resistance in exposed joints
- Guaranteed of a long term barrier to water and moisture



## RECOMMENDED PRODUCTS

**SiMP-Seal 57 HT**

High decking, primerless 1K SiMP elastic assembly adhesive

**SiMP-Seal 650**

Universal high UV, weathering and temperature resistant, 1K SiMP elastic adhesive & sealant

**SiMP-Seal 55**

Multipurpose, wide spectrum of adhesion, 1K SiMP elastic adhesive & sealant

**U-Seal 550 FC**

High thixotropy, fast curing, 1K PU elastic adhesive & sealant

**G+S Cleaner**

Highly effective solvent free foaming professional cleaner

**Cleaner E**

Professional industrial cleaner and remover. Heptane based

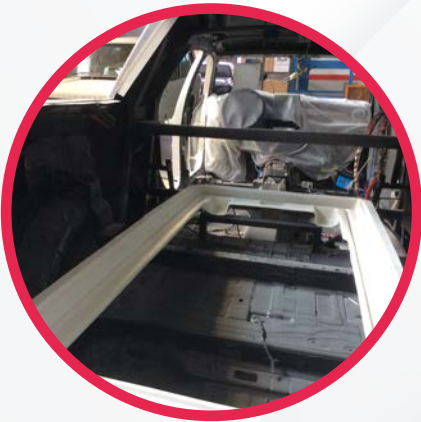
**Activator 400 NP**

Adhesion promoter for non-porous substrates

# FLOOR BONDING & SEALING

Floor panels in industrial and commercial vehicle have become a structural part of the vehicles themselves, together with the vehicle body skeleton. They are constantly subjected to mechanical, dynamic stress and extreme environmental conditions. **U-Seal** and **SiMP-Seal** adhesives and sealants provide high bond strength and excellent resistance to vibrations, ensuring the long-term integrity and stability of the floor panels. Their sealing properties also prevent the ingress of moisture, contributing to the overall durability and safety of the vehicle.

- FEATURES & BENEFITS
- Elasticity provides sound and vibration damping
  - Reduction of weight grants potential fuel consumption reduction
  - Broad adhesion spectrum between different materials
  - Improving protection and higher occupant safety



## RECOMMENDED PRODUCTS

<i>SiMP-Seal 650</i>	Universal high UV, weathering and temperature resistant, 1K SiMP elastic adhesive & sealant
<i>SiMP-Seal 55</i>	Multipurpose, wide spectrum of adhesion, 1K SiMP elastic adhesive & sealant
<i>SiMP-Seal 630</i>	Multipurpose, sprayable, 1K SiMP elastic adhesive & sealant
<i>U-Seal 550 FC</i>	High thixotropy, fast curing, 1K PU elastic adhesive & sealant
<i>U-Bond 301</i>	One-part liquid PU adhesive for wood and panel bonding
<i>Cleaner E</i>	Professional industrial cleaner and remover. Heptane based
<i>Activator 400 NP</i>	Adhesion promoter for non-porous substrates

# ROOF & AIR CONDITIONING

Roofs are the most exposed parts of vehicles, they are constantly subjected to extreme weathering conditions and at the same time, must represent the safest barrier to prevent leakage and water penetration. All this combined with strict esthetical and aerodynamics requirements. **U-Seal** and **SiMP-Seal** adhesive and sealants offer reliable adhesion and sealing properties, ensuring a permanent bonding and sealing of the roof and air conditioning units. Their resistance to weathering, UV exposure and temperature changes helps maintain the integrity of the bond and seal, contributing to the long-term performance and durability of the vehicle; in particular compensating and absorbing the effect of thermal expansion and combination of different materials.

## FEATURES & BENEFITS

- Guaranteed a long term barrier to water and moisture
- Easy workability and processing is an identity of one component elastomers
- Smooth finishing is given in visible joints
- Adhesives avoid damage to corrosion protection treatments
- Moisture resistance is obtain with specialty formulations



## RECOMMENDED PRODUCTS

### *SiMP-Seal 650*

Universal high UV, weathering and temperature resistant, 1K SiMP elastic adhesive & sealant

### *SiMP-Seal 55*

Multipurpose, wide spectrum of adhesion, 1K SiMP elastic adhesive & sealant

### *U-Seal 550 FC*

High thixotropy, fast curing, 1K PU elastic adhesive & sealant

### *G+S Cleaner*

Highly effective solvent free foaming professional cleaner

### *Cleaner E*

Professional industrial cleaner and remover. Heptane based

### *Activator 400 NP*

Adhesion promoter for non-porous substrates





# PRODUCT CHART

Assembling buses involves joining various components and having the right sealant plays a critical role in ensuring airtightness, water resistance and overall structural integrity. To simplify the selection process, please refer to the present Product Chart for Sealants in Bus Assembly Applications.

Our Product Chart is designed to guide bus manufacturers, engineers, and maintenance professionals in choosing the most suitable sealant for their specific needs, taking into consideration factors such as adhesion, flexibility, durability, chemical resistance and ease of application.

At NPT, we take pride in offering high-quality sealants that meet stringent industry standards. We invite you to explore our Product Chart and leverage our expertise in sealant technology. Contact our knowledgeable team for further assistance, customization options, or any additional information you may need. Together, let's ensure your bus assembly applications are sealed to perfection!



-  Recommended solution
-  Suitable solution

Front/Rear windshield bonding
Side window bonding
Window and screen backfilling
Front/rear mask bonding
Front/rear mask sealing
Side Panel Bonding
Roof Bonding
Metal to metal bonding
Exterior Sealing
Floor Bonding
Luggage door Bonding
Hem-flange Bonding
Bonding of insulation panels
Bumper bonding
Gap filling
Seam sealing
Interior Sealing
Sound dampening
Roof sealing
Air Conditioning sealing
Small Component Bonding
Trim Assembly
Plastic/GRP sealing
Anti-Flutter Sealing
Ceramic frit priming
Non porous surface priming
Plastic priming
Surface degreasing and cleaning
Glass and surface cleaning

Response	Percentage
U.S. should take action	85%
U.S. should not take action	15%



# THE REVOLUTIONARY TECHNOLOGY

SiMP Advanced represents the extended technological system that meets the needs of the market. The product combines the main and typical advantages of silane technology with the high mechanical performance currently reserved for the exclusive prerogative of polyurethane technology, thanks to the proprietary polymer backbone structure we have developed. SiMP Advanced allows to bypass the surface preparation step increasing the manufacturing efficiency and at the same time, creating important savings of cost and time compared to current solutions. Performance characteristics of the product and a whole series of qualitative standards allow pointing at the concept of total quality, also made up of respect for the environment, safety, efficiency and compliance with industry standards.



**COST  
SAVING**

**HIGH  
PERFORMANCE**

**HEALTH &  
SAFETY**



Ideal for bonding and back filling features  
Easy to apply and tool  
No pre-treatments  
Primerless adhesion on several substrates



High tack grab properties  
High mechanical performance  
Fast curing and weight reduction  
Ageing and weathering resistance



No CO<sup>2</sup>  
No Hazard symbols  
No isocyanate and solvent  
No use of accessory dangerous goods



**NEW GENERATION TECHNOLOGY**



**ENVIRONMENTAL SUSTAINABILITY**



**ULTIMATE MECHANICAL PERFORMANCE**



**MANUFACTURING PROCESS EFFICIENCY AND DESIGN**





# BOOSTER PASTE SYSTEM

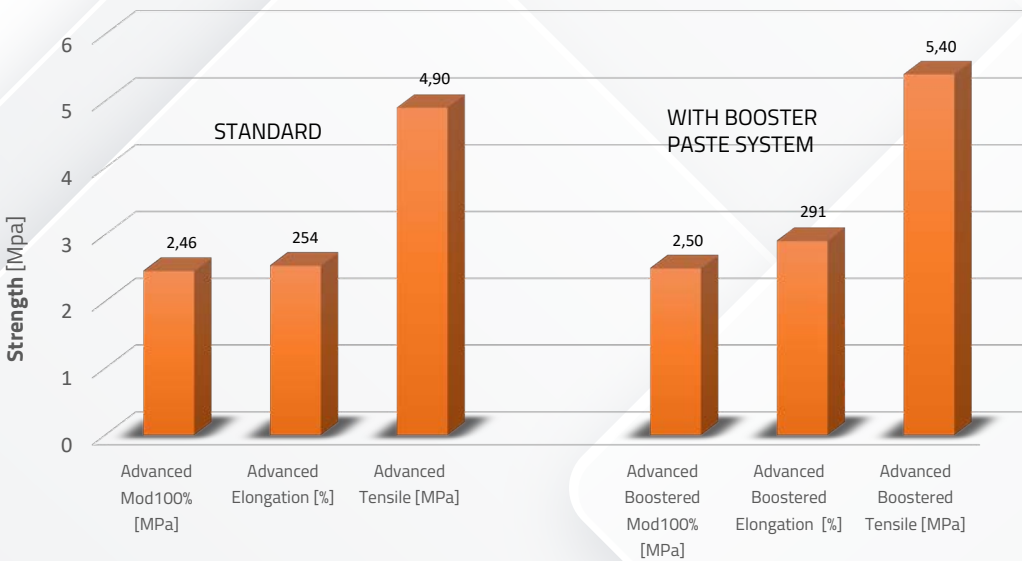
Starting from the main drivers of the market such as environmental sustainability, mechanical performances, design requirements and manufacturing efficiency, NPT moves its continuative R&D activity toward the research of innovative solutions. Based on our strong experience we are aware that the crucial advantage allowing a consistent economic saving for the manufacturers is the possibility to reduce the working time and shorten the manufacturing process. NPT Booster paste system has been developed for such purpose. It allows our one component SiMP or PU adhesives and sealants to be mixed with our Booster paste, transforming the mechanism from curing-through-volume to full-volume curing. This allows our elastomers to deliver their operative mechanical performances in a very short time. Rheological and final mechanical performances depend on the original adhesive or sealant.

- Allow full-volume reticulation even between non-porous materials and at low temperatures
- Allow fast strength build-up
- Speeds up the adhesive curing reaction
- Maintains adequate working time
- Reduce waiting time for subsequent application steps
- Optimize assembly process
- Maintain performance regardless of workshop temperature (e.g., in winter)

## LAP SHEAR STRENGTH BUILD-UP



## MECHANICAL CHARACTERISTICS



ISO 37 / DIN 53504 - 7 days at 23°C / 50% RH



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Video



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