

ENGI-
NEERING
LIFE

**TPE SOLUTIONS FOR
AUTOMOTIVE
WEATHERSEALS**





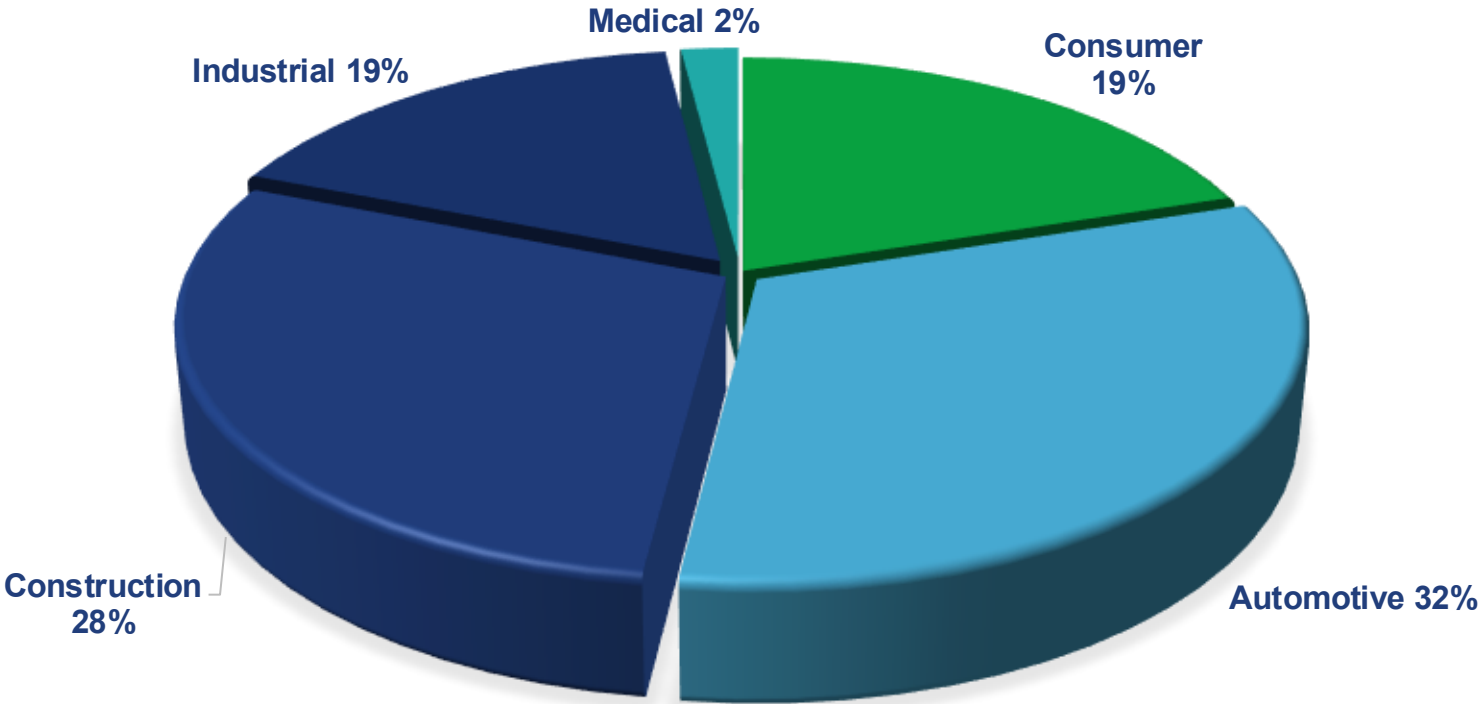
**Everyday Life
Engineering
Partner of
Global TPE Users**



MARKETS



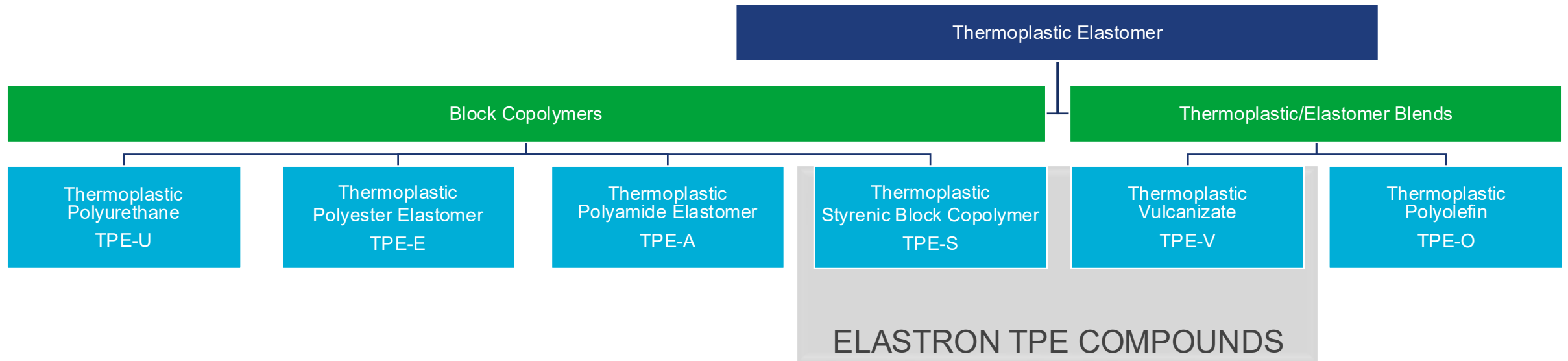
Markets	Percentage Distribution
Automotive	32%
Construction	28%
Consumer	19%
Industrial	19%
Medical	2%





Thermoplastic Elastomers

Thermoplastic elastomers are a group of rubber-like materials that, unlike vulcanized conventional rubber materials, can be processed and recycled like thermoplastic materials. Thermoplastic Elastomers do not require curing or vulcanization during processing and can be processed by traditional thermoplastic processing equipments.





Temperature
Resistance



Weathering
Resistance



Recyclability



Wide Hardness
Range



Easy
Coloring

	Elastron G	Elastron V	Elastron D
Structure	SEBS/PP based TPE compounds	Crosslinked TPE compounds	SBS/PP based TPE compounds
Hardness (Shore A/D)	12 A - 65 D	30 A - 65 D	20 A - 65 D
Density (g/cm ³)	Min. 0,88	Min. 0,90	Min. 0,89
Compression Set	Good	Very Good	Medium
Elasticity	High	Very High	Medium
Service Temperature (°C)	-50°C to 120°C	-50°C to 135°C	-50°C to 70°C
Organic Solvent Resistance	Variable	Variable	Poor
Acid-Base Resistance	Good	Good	Good
Adhesion (Standard grades)	PP, PE, EVA	PP, PE, EVA	PP, PE, EVA
Adhesion (Bondable grades)	ABS, PC, PC/ABS, PBT, PETG, ASA, SAN, PMMA, PET, PA6/6.6, PS, HIPS, EPDM	EPDM	PS



General Purpose Grades

- Multi-purpose TPE-S and TPV compounds
- Various series lightweight to high density
- Extrusion grades to high flow grades
- **V101 – G101 Series**
- **V100 – G100 Series**

Weatherseal Grades

- Excellent long-term performance for outdoor applications
- **V251 – G261 Series**
- **V250 – G260 – G250 Series**

High Temperature Resistant Grades

- Excellent long-term performance at high temperatures for sealing applications
- **G201 – V201 Series**

High Flow Grades

- Low viscosity
- Easy filling of complex molds
- Long term performance for outdoor applications
- **G150 – G104 Series**

Low Coefficient of Friction Grades

- Low friction for semi-dynamic applications
- **V216 – V206 Series**

Bondable Grades

- Special TPE compounds for overmolding onto engineered plastics to attain soft touch property.
- **G500 – PA/ABS/PS Series**
- **G510 – EM Series**

Flame Retardant Grades

- UL V0 listed grades
- Low smoke density
- V1 – V2 grades
- HFFR – FR grades
- **G601 – V601 Series**
- **G611 – V611 Series**

Non-hygroscopic TPVs

- Non-hygroscopic TPVs where good sealing properties and surface appearance are important
- **V860 – V861 Series**

Special Grades Conforming Various Regulations

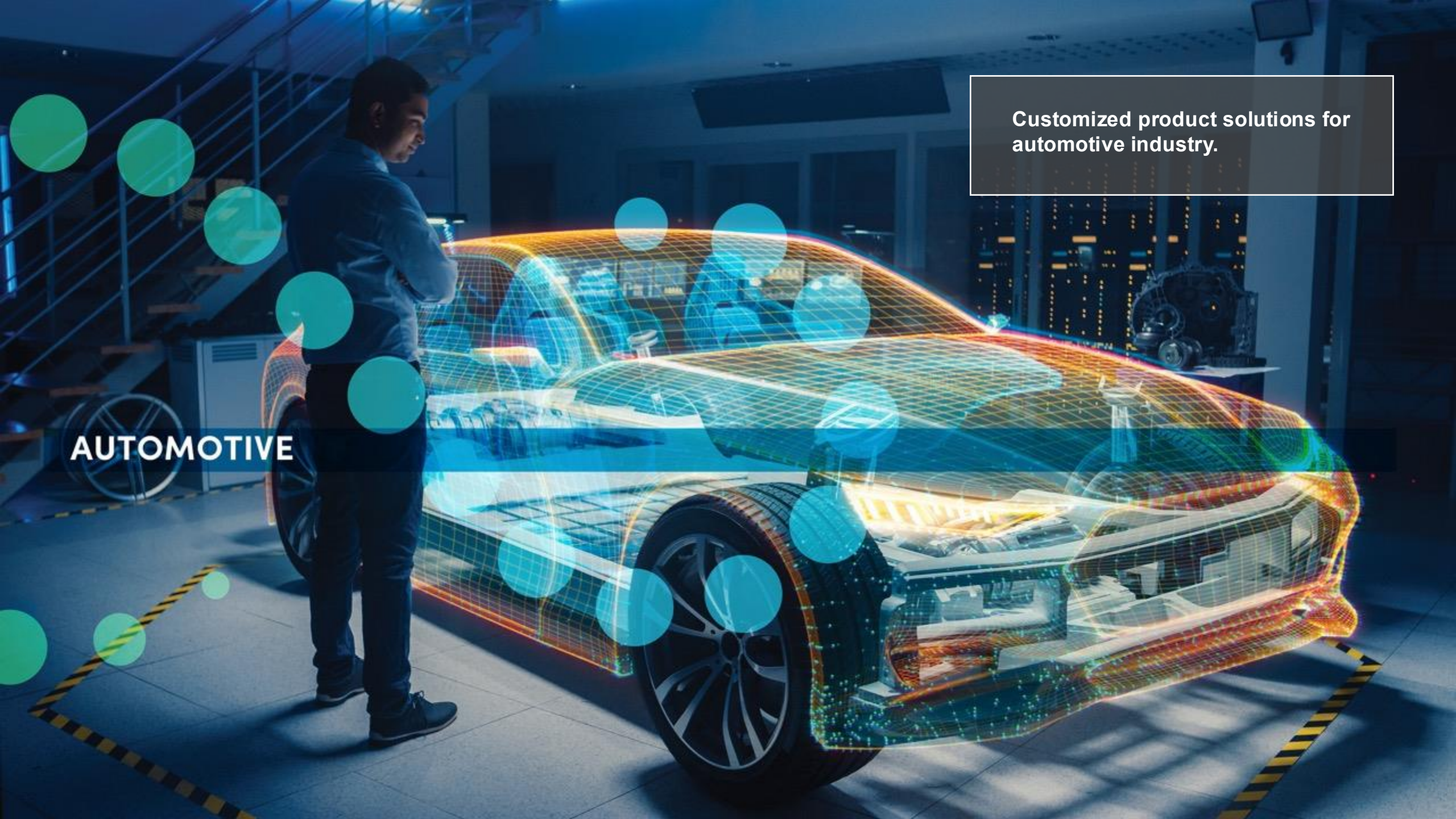
- NSF/ANSI 61
- EU 10/2011
- FDA 21 CFR
- USP CLASS VI
- **F.G & F.V - P.G & P.V series**
- **V281 Series**

Impact Modifiers for

- PP
- HDPE
- ABS
- PC
- PS
- PA

Customized product solutions for
automotive industry.

AUTOMOTIVE





Elastron TPE Grades for Automotive Applications

- Excellent weathering and ozone resistance
- Abrasion resistance
- Adhesion to PP, PE, EPDM etc. and engineering plastics (ABS,PC,PA, etc.)
- High temperature resistance
- OEM approved grades
- Excellent compression set
- Low temperature resistance
- Recyclability





Segments & Highlighted Applications

WEATHERSEALS

- Inner & Outer Belt Line Seals
- Glass Run Channels
- Sunroof Seals
- Glass Encapsulation
- Corner Molding
- Slip Coat
- End Caps

UNDER THE HOOD & CHASIS

- Active Grill Shutters
- Air Guide Shutters
- Air Duct
- Grommets & Plugs
- Boots & Bellows
- Hose, Pipes & Connectors
- Cable

INTERIOR

- Pad Heel
- Pads & Cup Holders
- Gearshift & Handbrake Bellow
- HVAC Flap Seals
- Floor Mats
- Pedal Cover
- Glovebox Cover & Housings

EXTERIOR

- Side & Front Spoiler
- Mud Flaps & Wheel Protection
- Exterior Mirror Seal
- Cowl Vent Seal
- Wiper Blade
- Fuel Entrance Cover Seal
- Charge Port Seal





Material Properties	Design	Processing	Safety & Regulation	OEM Approvals	Sustainability
•Weathering Resistance •Heat Resistance •Low Compression Set •Lightweight •Abrasion and Scratch Resistance •Rubbing Performance •Low CoF •Wide Hardness Range •Good Chemical Resistance	•Smooth Surface •Glossy Finish to a Matt Look •Adhesion to Thermoset EPDM •OEM Approved Color Codes	•Single / Multi-injection •Extrusion / Co-extrusion •Overmolding •Recyclability •High Flow Grades •Short Processing Cycle Time •Lower Energy Consumption •No Curing Required	•UL 94 Listed •ELV (2000/53/CE)	•GMW 15812 •GMW 15813 •RENAULT 03-10-104 •MS-AR-100	•PIR / PCR Grades •LCA Data •Higher Recycle Content •In Process Recyclability •Reducing of CO2 Emission



TPEs for Weatherseals

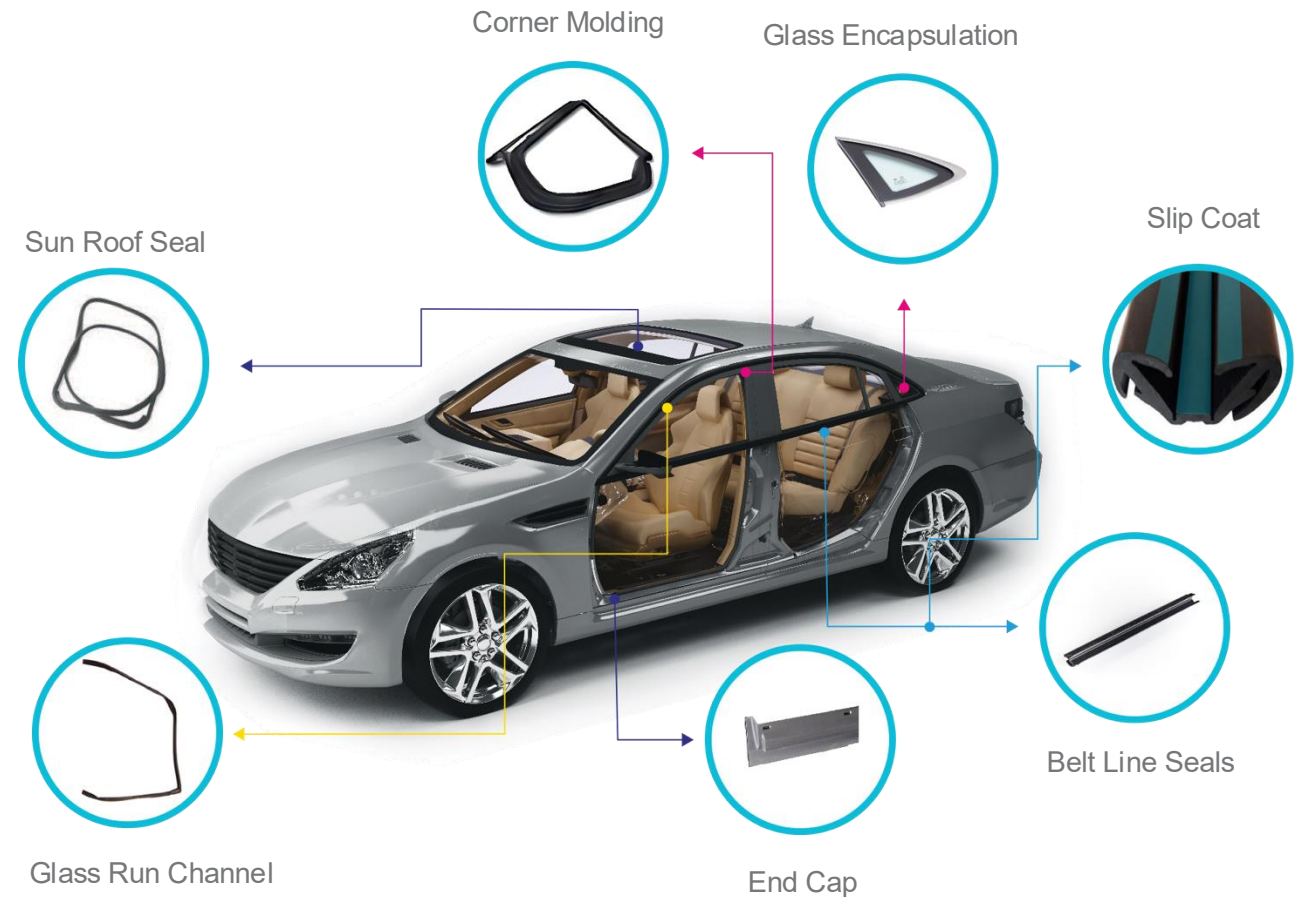
Automotive weatherseals are typically extruded strips installed between door frame and body frame.

Functions of seals;

- Preventing from Rain, Snow, Wind and Dust
- Insulation of Passenger Compartment from the Exterior Sound
- Reduced Vibration of Structural Panels

TPEs have benefits such as;

- Lower Part Cost
- Weight Reduction
- Lower VOC
- Ease of Manufacturing
- Recyclability
- Design Flexibility for Aerodynamic Requirements

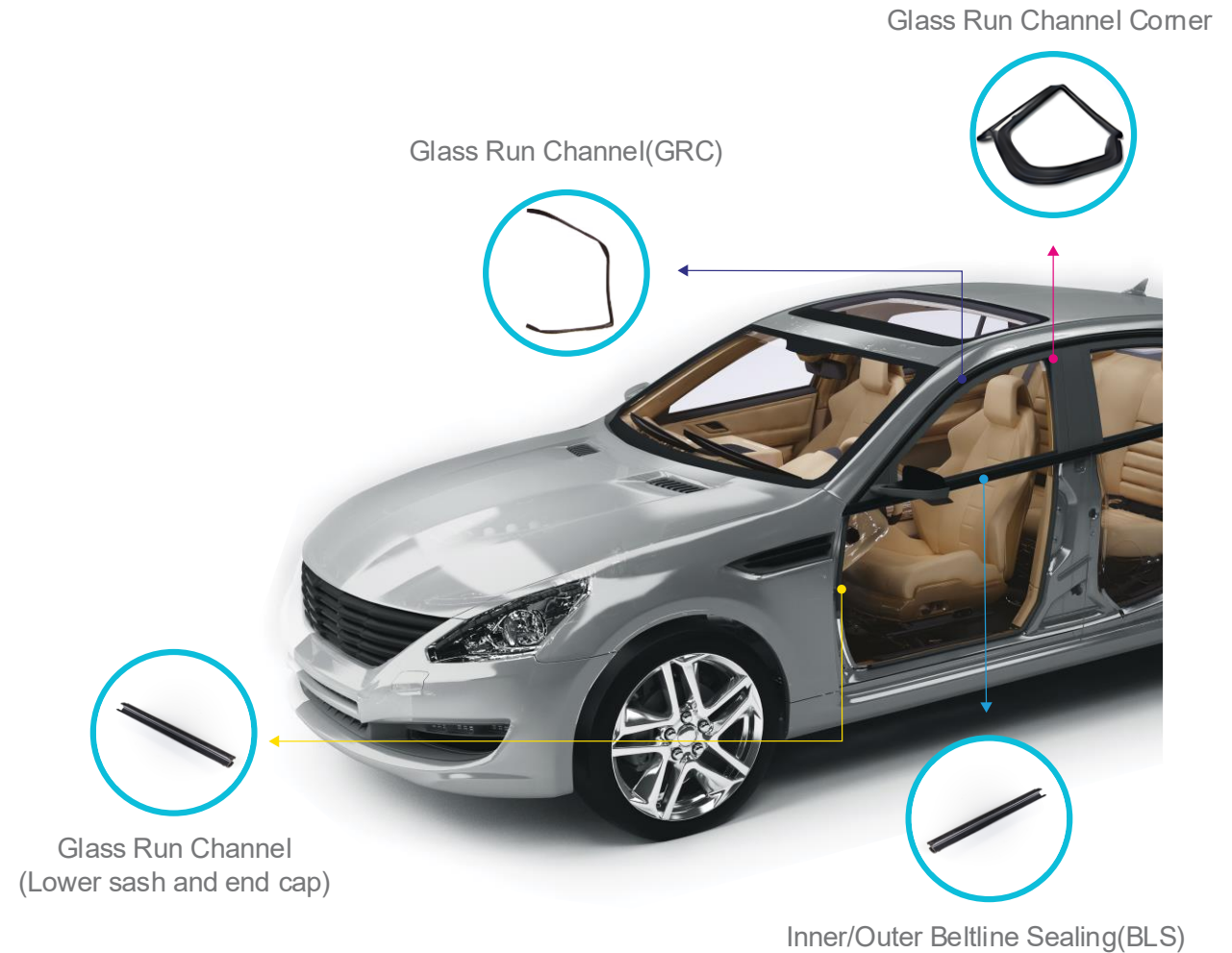




Glass Run Channel Sealing System

GRC seals are installed in window channels and help to immobilise window glass. Primary functions of seals are;

- Provide Secure Sealing
- Protect Against Wind, Water, Dust and Sound.





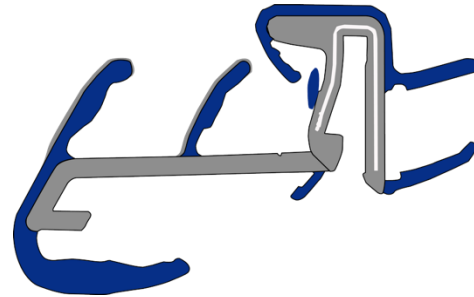
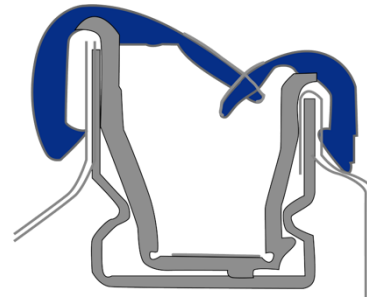
BLS & GRC Lips

Product

- V251.A57.B
- V251.A67.B
- V251.A75.B
- G261.A60.B
- G261.A65.B
- G261.A70.B
- G261.A75.B

Key Features

- ✓ Excellent Weathering and UV Resistance
- ✓ Good elastic recovery
- ✓ Smooth Surface
- ✓ Low Gloss
- ✓ Sustainable Product Solutions (PIR / PCR based)





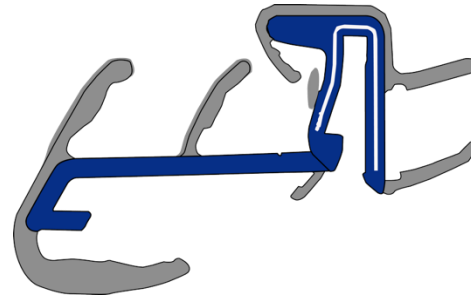
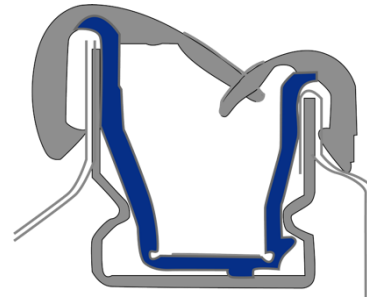
BLS & GRC Core

Product

- V101.A72.B
- V101.A79.B
- V101.A86.B
- V101.A91.B
- V101.D35.B
- V101.D41.B
- G441.D40.B
- D101.A87.B.P
- D101.D35.B

Key Features

- ✓ High Strength and Stiffness
- ✓ Low Odor
- ✓ Low VOC Emission
- ✓ Foamable
- ✓ Weight Reduction
- ✓ Sustainable Product Solutions (PIR / PCR based)





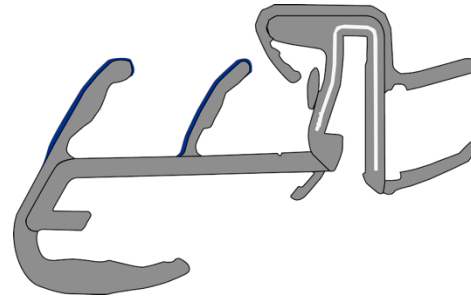
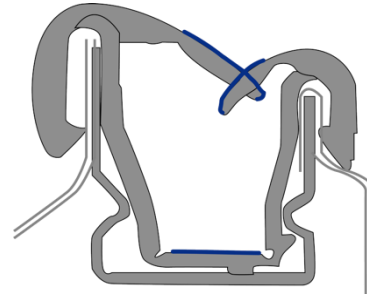
Slip Coat

Product

- V206.D40.B
- V206.D51.B
- V206.D60.B
- V251.D41.B

Key Features

- ✓ Low CoF
- ✓ Thin Layer Coatings with Co-extrusion Process
- ✓ Good Abrasion and Scratch Resistance
- ✓ Long-term Thermal and Weathering Stability
- ✓ Smooth Surface
- ✓ Sustainable Product Solutions (PIR / PCR based)





Corner Molding

Product

- V216.A60.B
- V216.A70.B
- V216.A80.B
- G560.A65.B.EM
- G560.A75.B.EM
- G560.A85.B.EM
- G510.A65.B.EM

Key Features

- ✓ Low CoF
- ✓ Overmolding onto EPDM
- ✓ Long Term Thermal and Weathering Stability
- ✓ Easy Processing and Short Cycle Time
- ✓ Good Elastic Recovery
- ✓ Smooth Surface
- ✓ Sustainable Product Solutions (PIR / PCR based)

Corner Molding





Glass Encapsulation

Product

- V250.A59.B
- V250.A64.B
- V250.A74.B
- G250.A59.B
- G250.A65.B
- G250.A70.B
- G260.A60.B
- G260.A65.B
- G260.A75.B

Key Features

- ✓ Good Elastic Recovery
- ✓ Long-term Thermal and Weathering Stability
- ✓ Short Processing Cycle Time
- ✓ Smooth Surface
- ✓ Sustainable Product Solutions (PIR / PCR based)

Glass Encapsulation





End Cap

Product

- V216.A38.B
- V216.A45.B
- V216.A60.B
- G560.A45.B.EM
- G560.A55.B.EM
- G560.A65.B.EM

Key Features

- ✓ Low CoF
- ✓ Overmolding onto EPDM
- ✓ Short Processing Cycle Time
- ✓ Good Elastic Recovery
- ✓ Long-term Thermal and Weathering Stability
- ✓ Smooth Surface
- ✓ Sustainable Product Solutions (PIR / PCR based)



End Cap





Sunroof Seals

Product

- V251.A57.B
- V251.A67.B
- V251.A75.B

Key Features

- ✓ Good Elastic Recovery
- ✓ Long-term Thermal and Weathering Stability
- ✓ Smooth Surface
- ✓ Low Gloss
- ✓ Sustainable Product Solutions (PIR / PCR based)

Sunroof Seal

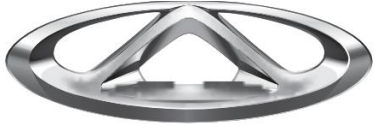




Tier References

	 NOVARES		 HUTCHINSON®
 STANDARD PROFIL	 PLASTIC OMNIUM		 MAGNA
 HENNIGES AUTOMOTIVE	 VINTECH INDUSTRIES A DEDICATED GLOBAL TIER 2 SUPPLIER*	 ŞİŞECAM	 DRÄXLMAIER
 woco® Powered by Technology	 MONTAPLAST		
 GRAND TRAVERSE PLASTICS	 INDUSTRIAS ALEGRE		 Orhan Holding
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