



Providing solutions for
**Direct Glazing and
Panel Bonding**

TOTALSEAL



LE JOINT FRANCAIS



www.swiftvalleycoaches.co.uk



Benefits

Flexible engineering adhesive and sealant systems

STRESS DISTRIBUTION

Totalseal distributes stress evenly over the whole bonding area, eliminating riveting and conventional fixings.

MOVEMENT

Totalseal's elasticity and strength allow for movement and different coefficients of thermal expansion of substrates.

VIBRATION

Totalseal absorbs stress, dampens road noise and reduces vibration, therefore improving the comfort of the passengers.

VERSATILITY

Totalseal's outstanding adhesive characteristics enable a wide range of materials to be bonded.

CORROSION RESISTANCE

Totalseal eliminates drilling and fixings that lead to corrosion.

DURABILITY

Totalseal offers good life expectancy.

GAP FILLING

Totalseal's adhesives and sealants cure to form a flexible, rubbery and waterproof seal with high elongation.

HIGH STRENGTH

Totalseal offers high viscosity and fast grab for larger panels, without mechanical fixings. This provides the vehicle with more torsional strength, improved body and glass rigidity.

ECONOMY

Totalseal's applications allow for a faster more economic production technique.

LIGHTWEIGHT CONSTRUCTION

Totalseal reduces stress concentrations and when combined with different materials, enables thinner and lighter panels to be used.

IMPROVED AERODYNAMICS

Totalseal's versatility and efficient assembly techniques enable improvements in design styling and appearance of a vehicle. This allows for a sculptured aerodynamic design.

TECHNICAL ADVANTAGES

Totalseal offers many technical advantages, different production capabilities and improved processes, which will increase the service life of a vehicle.

SEAM SEALING

Totalseal's elastic seam sealing gives superior waterproof joints between panels.



Product Profile

DIRECT GLAZING

- TOTALSEAL 110
- TOTALSEAL 180
- TOTALSEAL 185 HMLC
- TOTALSEAL 210

PANEL BONDING

- TOTALSEAL 34
- TOTALSEAL 35
- TOTALSEAL 42
- TOTALSEAL MS55

PRIMERS & ACTIVATORS

- TOTALSEAL 5022
- TOTALSEAL 5025
- TOTALSEAL 5028
- TOTALSEAL 7016

STRUCTURAL BONDING

- TOTALSEAL 42

SEAM SEALING

- TOTALSEAL 33 UV
- TOTALSEAL 34

- TOTALSEAL B11
- TOTALSEAL 45
- TOTALSEAL MS55



Applications

Totalseal adhesives and sealants for direct glazing and panel bonding



SEAM SEALING

- Corrosion resistant
- Overpaintable
- Gap filling

ROOF BONDING

- Thermal expansion
- High strength
- Waterproof

GRP BONDING

- High strength
- Flexible
- Gap filling

FLOOR BONDING

- Noise reduction
- Stress distribution
- Anti-vibration

PANEL BONDING

- Quick and easy assembly
- Reduced friction
- Elimination of water ingress

Further notes on product features and benefits

FLOOR BONDING

Floor bonding using conventional fixed rigid fasteners is labour intensive and allows moisture ingress into wood causing delamination. Rigid fixtures also allow direct transmittance of vibration and noise through the floor.

BENEFITS

Totalseal 34, 35, 55 provide a flexible elastic seal, which can withstand vibration, shock loads and thermal expansion between a wide variety of substrates. Totalseal has good chemical resistance and can withstand elongation and distortion.

PANEL BONDING

Conventional fixings of side panels require many mechanical fastenings which is labour intensive during production. In service these fixings can cause problems of deterioration, vibration and corrosion.

BENEFITS

Totalseal 34, 35, 42, 55 allow for rapid fixing of side panels with minimal clamping and assembly. Totalseal is easy to apply and in service reduces friction, by absorbing thermal shock and movement, preventing galvanic corrosion. Totalseal allows flush panel fixing

giving pleasing aesthetic smooth lines to the exterior of the vehicle, whilst affording a watertight seal.

SEAM SEALING

Water ingress has long been a problem in the automotive, bus, coach and train industry. A water leak is a potential problem of corrosion and long term costly repair.

BENEFITS

Totalseal 33UV, 34, 45, 55 flexible seam sealants when used in all interior and exterior panel joints not only eliminates traditional fixings and rivets, but when cured, Totalseal becomes a permanent flexible rubber seal and an economic way to produce a watertight seal.

GRP BONDING

Due to the coefficients of expansion when fixing to two different substrates in vehicle body construction, e.g. GRP to metal, GRP to glass, a product must be used to withstand both thermal shock and impact absorption.

BENEFITS

Totalseal 34, 35, 42, 55, 110, 180, 210 products offer a solution to any combination of product fixing, high elongation, good adhesion, gap filling and superior sealing performance.

Totalseal can withstand vibration, shock loads and thermal expansion between a variety of substrates. Totalseal has good chemical resistance, can withstand elongation and distortion and can be overpainted.

DIRECT GLAZING

The process of bonding glass into the vehicle body aperture on front, rear and side glasses to offer a watertight flexible seal between glass and body is now accepted as the industry standard, giving torsional strength and safety in glass installation.

BENEFITS

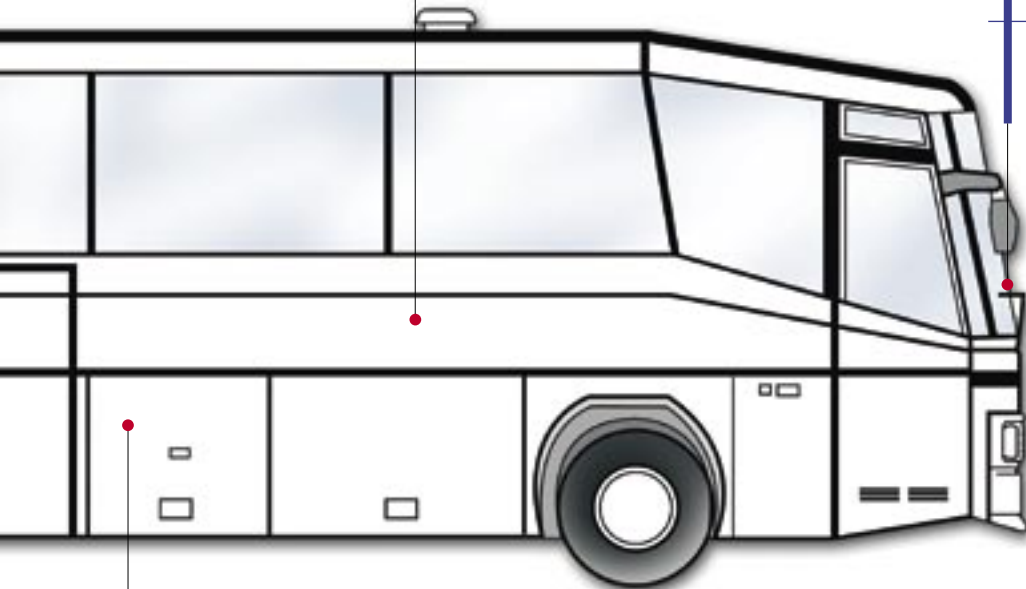
Totalseal 110, 180, 185, 210 polyurethane adhesives for direct glazing have been tested to FMVSS 208 and 216 for glass retention in vehicles. Totalseal is easy to apply; offers increased safety for passengers; compensates on fitting tolerances; water leak elimination; dampening of wind and driving noise; reduction of drag increases fuel savings, meaning lighter weight vehicles with more scope for aerodynamics and cost effective installation.

COSMETIC FINISHING

- Aesthetic
- Aerodynamic
- Flexible

DIRECT GLAZING

- Structural strength
- Torsional strength
- Improved safety



LUGGAGE & DOOR ASSEMBLY

- Impact absorption
- Vibration reduction

ANCILLARY PRODUCTS

- A comprehensive range of complementary products are available to support the main products.

ROOF BONDING

Materials commonly used for the construction of vehicle roofs are a metal framework of usually aluminium alloy or steel, with sheets of aluminium or GRP fixed directly to the framework. These structures can reach very high temperatures and traditional fixing methods must accommodate both thermal and structural movement. In addition mechanical fixings require drilled holes which increase the risk of water leakage.

BENEFITS

Totalseal 34, 42 elastic bonding technology allows ease of assembly of a roof structure without the need for drilling and mechanical fixing of the watertight skin. The thermal movement is absorbed by the Totalseal elastic adhesive, eliminating vibration or thermal breakdown.

STRUCTURAL BONDING

If a more rigid fixing method is required to offer structural strength and integrity when fixing metal to metal, or other substrates, a rigid adhesive is required.

BENEFITS

Totalseal 42 structural adhesive offers extremely high bond strength to all surfaces and a rapid cure mechanism.

LUGGAGE & DOOR ASSEMBLY

In the assembly of doors and luggage compartments, traditional fixings between different substrates can cause vibration and noise problems. This can lead to distortion between panels and costly rectification.

BENEFITS

Totalseal 34 and 42 offer a flexible bonding solution to eliminate movement and vibration when assembled onto the vehicle. In years of service they help to reduce impact and stress forces on door and luggage compartment mechanisms.

COSMETIC FINISHING

Traditional seam sealing in joints can move after application and dry out, leaving unsightly cracks in the paint surface. After some time this allows water ingress, corrosion and eventual panel removal, resulting in costly replacement.

BENEFITS

Totalseal 33UV, 34, 35 allow for flexible movement in seam sealing where expansion and contraction take place in panel joints, therefore reducing costly repairs and repainting.

MOULDING AND TRIM FINISHING

To eliminate traditional fixings when fastening rubber moulding and trim finishing strips to the vehicle body.

BENEFITS

Totalseal 34, 35, 42 can be used as a flexible adhesive to bond all rubber, EPDM and plastic finishing trims to all surfaces, allowing for permanent fixing without screws.

ANCILLARY PRODUCTS

- Cleaning Solvents.
- Primers and Activating Chemicals for Adhesion Promotion.
- Contact Adhesive for Trim and Floor Coverings.
- Fastak Spray Contact Adhesive.
- Pre-Formed Butyl non-setting Mastic.
- Handy Wipe Cleaning Cloths.
- Plastic Repair Kit, etc.
- Range of application equipment



TOTALSEAL

For over fifty years Le Joint Francais, part of the Hutchinson division of the TOTAL group, continues to be one of the world's largest manufacturers of adhesives and sealants for the aerospace, automotive, insulating glass and marine industries.

From Le Joint Francais' manufacturing plants, products are distributed through its sales and marketing companies in Europe and to a network of appointed agents around the world.

The company has research and development laboratories in France and Germany to meet the industry's growing demand for innovative solutions. As an example of on-going quality assurance Le Joint Francais regularly conducts frontal crash tests to FMVSS 208 and 216 to confirm safe drive away times for TOTALSEAL direct glazing products.

The quality system of the adhesives, sealants and coatings division of Le Joint Francais is ISO 9001 approved and has many other OEM accreditations. In-plant



laboratories ensure consistent production to the company's high quality standards. Le Joint Francais works in partnership with its customers, from the initial concept through to final production, with on-going technical support always available.



- **Original Equipment Manufacturers**
- **Sub Suppliers**
- **Repair Aftermarket**

- **Quality Assurance ISO 9001 and ISO/TS 16949**
- **Environmental System ISO 14001**
- **Member of BASA and GGF**

Research, Development and Quality Assurance

No compromise on quality - our most valuable asset.

The TOTAL group provides state of the art technology and cutting edge skills. Our research facilities are involved in study fields such as rheology, physical characterisation of materials, analytical chemistry, computing and mechanics to ensure that the adhesive and sealant systems meet and exceed every aspect of our customers' requirements.

The company's philosophy is :

INNOVATION DEVELOPMENT IMPLEMENTATION

Le Joint Francais and Hutchinson are approved major OEM suppliers to car, bus, coach and transport manufacturers throughout the world.

We have acquired extensive knowledge of the aerospace, automotive, insulating glass and marine industries through years of close collaboration with the key manufacturers in these sectors.



Every endeavour has been made to ensure that the information given herein is true and reliable, but it is given only for the guidance of our customers. The Company cannot accept any responsibility for loss or damage that may result from the use of the information, due to the possibility of variations of processing or working conditions and of workmanship outside our control. Users are advised to confirm the suitability of this product by their own tests. The word Totalseal is a trade mark registered in the United Kingdom and many other countries.

Quality Assurance System certified to:
ISO 9001 and ISO/TS 16949
Environmental System certified to: ISO 14001

Global Manufacturing

In conjunction with the European companies below, a further network of appointed distributors provide a comprehensive service worldwide.

United Kingdom LJF UK

Centurion Way
Meridian Business Park
LEICESTER LE19 1WH
Tel: +44 (0) 116 289 1888
Fax: +44 (0) 116 289 2283
Email: sales@ljfm.co.uk

Germany DEUTSCHE HUTCHINSON GmbH

Rudolf Diesel Str. 20
D - 65760 ESCHBORN
Tel: +49 (0) 617 39 35 40
Fax: +49 (0) 617 39 35 410
Email: info@ljfm.de

Spain LJF IBERICA SA

Avila, 48-50
08005
BARCELONA
Tel: +34 (0) 93 485 62 26
Fax: +34 (0) 93 485 62 27
Email: ventas@ljf.es

Scandinavia LJF SCANDINAVIA

Bleketvagen 34
SE-47196 BLEKET
SWEDEN
Tel: +46 (0) 304 675 804
Fax: +46 (0) 304 675 703
Email: thimigbg@algonet.se

Italy LJF ITALIA

HUTCHINSON S.r.l.
Via Natale Bruno, 32
10090 CASCINE VICA
RIVOLI (TO)
Tel: +39 011 95 07 411
Fax: +39 011 95 91 790
Email: enrico.rosso.ljf@hutchinson.it

Le Joint Francais is part of TOTAL, one of the world's largest oil companies and chemical manufacturers.

From two factories in France, located in Bezons and Maizières, the company supplies high performance adhesives and sealants to customers worldwide.



Maizières

Bezons

LE JOINT FRANCAIS



**Sealants, Adhesives and
Coatings Division**

84-116 rue Salvador Allende B.P.16
95870 Bezons FRANCE
Tel: +33 (0) 1 34 23 34 69
Fax: +33 (0) 1 34 23 35 25
Email: info@ljfm.com
Web: www.ljfm.com

