

## TECHNICAL DATA

### ThreeBond 1521

### Multi-purpose Rubber Adhesive

**Three Bond 1521** is a high performance multi-purpose bonding agent made with synthetic rubber and synthetic resin. It can withstand temperature up to 100°C after proper curing.

#### Directions for Use

##### **Surface cleaning**

Remove moisture, oil, dust, rust, oxide film, etc. completely from the surface. For metal surfaces, scrape off rust, oxide film, etc. with fine sandpaper, sandblasting or filing then wash off oil with gasoline, Trichloroethylene or benzene. Metals are bonded together best when the surface was subject to precision grinding.

Less suitable preparations are sand blast finishes, forged surfaces, surfaces with lengthwise and sidewise furrow in order of decreasing bonding effectiveness.

Wash off all oil, dirt, releasing agent, etc., from vulcanised rubber surfaces with sandpaper or file.

Moulded synthetic resin product retains releasing agent or lubricant on surfaces. Remove such substances with solvent.

##### **Application method**

Use fingers, brush, spatula, spray gun or roller depending on size of surfaces.

##### **Cement quantity required**

About 25-30 g/cm<sup>2</sup> for porous surfaces and 20-25 g/cm<sup>2</sup> for non-porous surfaces. Absorbing surfaces like canvas need two or three repeated application. In such cases, start the second or the third coating when the undercoating has got almost dried.

##### **Bonding method**

- Bonding at room temperature

Clean the surfaces then coat with Three Bond 1521. Allow the solvent to evaporate and the cement to lose its viscosity. This drying process usually takes 5~10 minutes. The time length varies with atmospheric temperature, humidity, etc. If it is necessary to correct the unevenness of the cement coating, apply 1~2 more times. Dry as described above. After the solvent has evaporated, press the surfaces against bonded surfaces. To ensure the most effective adhesion, it is essential to have solvent evaporated completely. Porous surfaces absorb the solvent and become ready for use in about 12 hours while non-porous surfaces like metals take over 24 hours to become usable.

##### **Re-moistening method**

In this method, the surfaces must cure for at least 30 minutes after applying cement. After the solvent is completely evaporated, apply a small amount of give-renewed tackiness to the cement. Then, a little while later, press the surfaces together.

## Characteristics

|                                    |   |
|------------------------------------|---|
| Appearance                         | Amber-coloured viscous fluid with a slight brown tinge. |
| Main ingredient                    | Chloroprene synthetic rubber and phenol resin           |
| Non-volatile matter (%)            | 26  |
| Viscosity (25 °C)                  | 2,800 mPa.s   |
| Specific gravity (25 °C)           | 0.91  |
| Set-to-touch time (25 °C, RH 80 %) | 9 minutes   |
| Tack retain time (25 °C, RH 80 %)  | 9 minutes   |

|                |               |
|----------------|---------------|
| Method         | same as (A)   |
| Open time      | 30 min.       |
| Adhesion area  | 25mm x 12.5mm |
| Pulling speed  | 2.5cm/min.    |
| After 24 hours | After 1 week  |

## Materials that can be bonded

|                             |   |
|-----------------------------|---|
| Metals                      | Iron, aluminium, duralumin, brass, etc.   |
| Plastics                    | Poly-vinyl chloride, polymeta acrylic resin, phenolic resin, polystyrene, ebonite, etc.             |
| Non-metals                  | Wood, fabrics, leather, ceramics, paper, concrete, mortar, etc.                                     |
| Natural & synthetic rubbers | SBR, NBR, neoprene, etc. Cannot be used for bonding polyethylene, polypropylene, fluoro-resin, etc. |

## Shear Strength Data

| Materials                | Shear Strength MPa {kgf/cm <sup>2</sup> } | Test Method |
|--------------------------|---|-------------|
| Steel/steel              | 1.14 {11.6}                               | JIS K 6850  |
| Aluminium/Aluminium      | 1.39 {14.2}                               |             |
| PVC/ PVC                 | 0.94 {9.6}                                |             |
| 6,6 Nylon/6,6 Nylon      | 0.60 {6.1}                                |             |
| Epoxy glass/ Epoxy glass | 1.17 {11.9}                               |             |
| PC/PC                    | 1.76 {17.9}                               |             |
| NBR/NBR                  | 0.48 {4.9}                                |             |

*Aging time: 168hours, open time: 5 minutes*

## Peel Strength Data

| Materials                 | Peel Strength kN/m {kgf/25mm} | Test Method |
|---------------------------|-------------------------------|-------------|
| Steel/ steel              | 1.06 {2.7}                    | JIS K 6854  |
| Steel /NBR                | 1.57 {4.0}                    |             |
| Steel / tent Cloth        | 3.10 {7.9}                    |             |
| Steel/vinyl leather cloth | 1.61 {4.1}                    |             |

*Aging time: 168 hours, open time: 5 minutes*

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## Effect of Aging Time on Shear Strength

| Aging Time/ h | Shear Strength MPa {kgf/cm <sup>2</sup> } | Test Method |
|---------------|---|-------------|
| 0             | 0.16 {0.4}                                | JIS K 6850  |
| 24            | 1.18{11.0}                                |             |
| 72            | 1.81 {18.5}                               |             |
| 168           | 2.16 {22.0}                               |             |
| 720           | Material failure                          |             |

*Open time: 5 minutes, material: Veneer/Veneer*

## Effect of Open Time on Shear Strength

| Open Time / minutes | Shear Strength MPa {kgf/cm <sup>2</sup> } | Test Method |
|---------------------|---|-------------|
| 0                   | 1.70 {17.3}                               | JIS K 6850  |
| 5                   | 2.16 {22.0}                               |             |
| 10                  | 2.66 {27.1}                               |             |
| 30                  | 1.91 {19.5}                               |             |

*Aging time: 168 hours, Material: Veneer/Veneer*

## Handling precautions

When precipitated layer is formed

Stir before use until it returns to its original state. Formation of the layer does not mean that the cement is no longer usable.

## Storage

Keep in a cool and dark place with the container firmly sealed.

Three Bond 1521 is combustible. Do not place the container where the temperature exceeds 50°C.

## Shelf Life

Unopened 24 months or 12 months for UN packaging stored at temperature of between 5 ~ 35°C.

## Packaging

Available in sizes of 5g, 1kg, 150ml and 15kg.

For UN packaging, in sizes of 15kg and 160kg.

## Disclaimer

|                                |
|--------------------------------|
| <b>For Industrial Use Only</b> |
|--------------------------------|

(Do not use for household purposes)

- The data contained in this report are obtained from experimental results, based on our test methods. We cannot assume absolute responsibility for accuracy and safety. Before using this product, use your own judgement to determine whether or not this product meets the requirements of the application and objectives. This includes the burden of responsibility and hazardous danger. The extent of the guarantee provides replacement for products, which are clearly unsatisfactory.
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