



Flexel™ FN1000

FN1000 is a reactive, low temperature heat-activated, reactive adhesive film for bonding similar and dis-similar plastic substrates like ABS, PC, PBT, pre-treated Olefins (low surface energy plastics), Polyamide, Polyimide, engineering plastics, SMC, FRP, GRP, and advanced composites. FN1000 is also very effective at bonding PET films, textiles, artificial and genuine leather.

| | |
|---------------------------|---------------------------------------|
| Technology / Base | Polyurethane Hybrid |
| Type of Product | Heat Activated Reactive Film Adhesive |
| Components | One component |
| Curing | Heat and Pressure Cure |
| Appearance / Color | Milky White |
| Consistency | Non-Tack Film |

Features and Benefits

- Low temperature, easy application method
- Excellent adhesion to plastics, textiles, leather, and good adhesion to metals
- High fracture toughness, peel and shear strength while maintaining flexibility
- High heat resistance and chemical resistance after cure
- Halogen free as defined by IEC 61249-2-21
- High bond strength on a variety of substrates
- VOC Emission free
- Low thermal expansion coefficient

Bonding and Curing Profile

Recommended bond line cure conditions:

- 90 °C for 60 sec at 22 N/cm²
OR
- 110 °C for 30 sec at 22 N/cm²

Contact HB Fuller technical support for additional curing recommendations

Storage Conditions

Store below 30°C and away from sunlight. Shelf life is 6 month from the date of manufacture.

Handling and Clean-Up

Please refer to the SDS for product handling and clean-up instructions

Application Instructions

1. Surfaces should be clean and free of any oils, residues, release agents, dust or any other contaminants. For optimum adhesion, the surface tension of the substrates to be bonded should be more than 38 dynes/cm.
2. Recommended surface preparation for optimal adhesion is as follows
 - a) PC, ABS, PBT, Glass: IPA wipe
 - b) Nylon, Polyolefin: Plasma Pre-treatment
 - c) Metal: Primer Pre-treatment
3. Place film adhesive between substrates.
4. Bond and Cure per indicated conditions above.
5. A uniform pressure distribution throughout the bond line is recommended for optimal bonding.
6. Fixture strength is achieved once bond reaches room temperature.
7. Allow to bond to equilibrate to room temperature for 60 min to achieve full strength.
8. Optional Pre-Tack Step: FN1000 may be pre-tacked to a substrate prior to processing. Pre-tacking the film adhesive on a substrate by pressing at 5 to 20 N/cm² and heating to 45 to 55°C for 3 to 10 seconds.

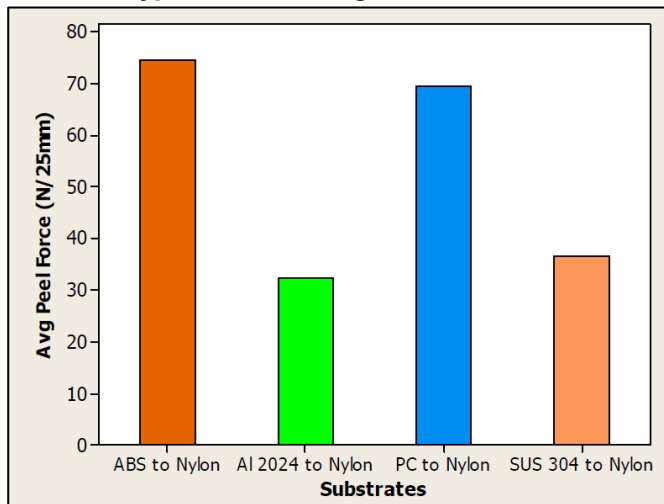


Technical Data

| Property | Value | Condition/Method |
|--|--------------------|---------------------------|
| Uncured Material Properties | | |
| Solids Content | 100% | |
| Shelf Life at 25°C | 6 months | |
| Specific Gravity | 1.12 | |
| Standard Available Film Thickness | 50 and 100 microns | |
| Cured Mechanical Properties | | |
| Young's Modulus | 180 MPa | Bonded at 90°C for 60 sec |
| Average Tensile Stress | 26 MPa | Bonded at 90°C for 60 sec |
| Average Tensile Strain | 550% | Bonded at 90°C for 60 sec |
| Glass Transition Temperature, T _g | -46 °C | DSC |

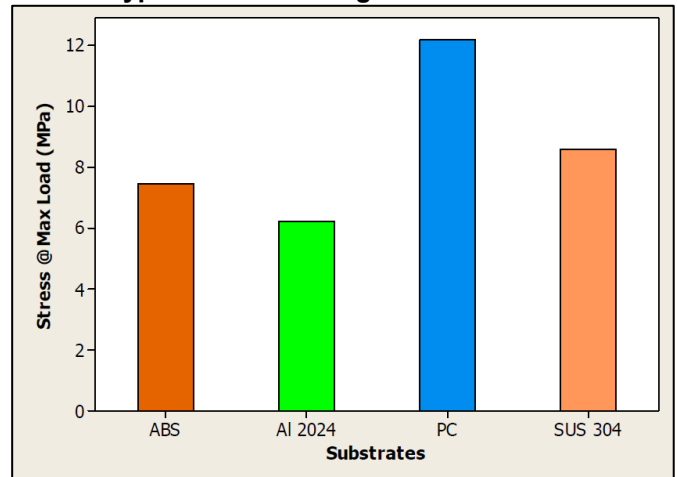
Typical Bonding Performance

Typical Peel Strength of FN1000-50



Note: Peeled at crosshead speed of 300 mm/min. Samples were pressed for 60 seconds at bond line temperature of 90°C and pressure of 22N/cm². Peel samples were conditioned for 24 hours at 50 % RH and 23 °C before testing. Bond strength to metal can be increase with primer application.

Typical Shear Strength of FN1000-50



Note: Pulled at crosshead speed of 300 mm/min. Shear area is 25 mm x 12 mm. Samples were pressed for 60 seconds at bond line temperature of 90°C and pressure of 22N/cm². Shear samples were conditioned for 24 hours at 50% RH and 23 °C before testing. Bond strength to metal can be increase with primer application.

Typical Packaging

Please contact your local Sales Representative for available packaging options.

Safety and Disposal

Please refer to the SDS for product safety and disposal instructions.

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