Scotch-Grip™

Insulation Adhesive 34

Product Data Sheet

Updated : November 1997
Supersedes : February 1997

Product Description

Scotch-Grip Insulation Adhesive 34 is a sprayable or brushable clear, synthetic rubber based adhesive that offers a realistic cost saving approach to the bonding of low density insulation materials. Scotch-Grip Insulation Adhesive 34 is designed to be applied with low cost, portable spray equipment units that use small air volumes or relatively low air pressures. When applied as directed, Scotch-Grip Insulation Adhesive 34 will not fog, mist nor develop excessive cob-webbing. Scotch-Grip Insulation Adhesive 34 is also easy to apply with a paint roller or brush.

Scotch-Grip Insulation Adhesive 34 offers a number of outstanding characteristics:

1. Fast Application with low cost, easily maintained equipment saves labour.
2. High coverage of 8.4m²/litre or more results in lower cost, when sprayed.
3. Immediate tack for rapid product assembly.
4. Long tack range to allow convenient handling.
5. Clarity for less clean-up due to overspray.
6. Mild solvent odour eliminates production line objections and crazing of sensitive plastics.
7. Good stability eliminates storage problems and waste.
8. Service Temperature Limits -35°C to 71°C (30°F to 160°F) but higher temperature resistance where light-weight insulation is bonded.

Physical Properties

Not for specification purposes

Solvent	Petroleum naphtha	
Consistency	Light Gel	
Specific Gravity	0.78	
Flashpoint	-23°C (Closed cup)	
Colour	Clear	
Solids Content	35% (typical)	
Shelf Life	6 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

Performance Characteristics

Not for specification purposes

Water Resistance	Good	
Weathering Resistance	Good	

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Performance Characteristics Cont..
Not for specification purposes

Fuel and Oil Resistance	Poor	
Strength of Adhesive 180°C peel strengths were determined by bonding cotton duck to galvanised steel: Adhesive was applied to both surfaces, bonds made and the completed bonds were dried 24 hours at room temperature followed by 48 hours at 49°C.	**Results:** Peel Strength. Scot Tensile Tester (50mm per min separation rate). Insulation Adhesive 34. 12 piw (Adhesion failure to steel).	
Humidity Resistance Fibrous glass insulation to galvanised steel bonds were prepared using recommended spray equipment. After 24 hours drying at room temperature, bonds were subjected to 95% R.H. at 49°C (120°F) for 30 days, bonds were then inspected.	**Results:** No corrosion of substrate, degradation or bond failure of the adhesive was noted.	

Application Characteristics

Surface Preparation:
Clean, dry, dust free surfaces are necessary if Scotch-Grip Insulation Adhesive 34 is to give optimum performance. Metals should be free of mill and cutting oils. All mould release agents should be removed from plastics. Waxes and protective coatings must be removed from wood and other surfaces on which this adhesive is to be used. Wiping of bonding surfaces with clean rags soaked with lead free petroleum naphtha will usually provide satisfactory surfaces.

Application:
When stored as recommended in this leaflet Scotch-Grip Insulation Adhesive 34 will be stable and mixing or stirring will consequently not be necessary. Dilution of this adhesive is also unnecessary and is not recommended.

Scotch-Grip Insulation Adhesive 34 sets because of solvent evaporation. A very aggressive tack range is built into this product to facilitate its use when applied to only one surface.

This is especially useful when bonding lightweight porous materials like low density fibrous glass, felt, cork, paper or cardboard. A longer tack range will result (2 hours or longer) if adhesive is applied to each surface to be bonded.

Applying adhesive to both bonding surfaces is indicated in the following cases:

1. **High Density Fibrous Glass Board.**
   This material is composed of relatively short fibres that are easily pulled out. By applying adhesive directly to the board, it tends to utilise these fibres, allowing a greater ultimate bond strengths.

2. **Polystyrene Foam.**
   Scotch-Grip Insulation Adhesive 34 is suitable if light coats are used on both surfaces. Allow 5 to 10 minutes open time before bonding to let the majority of the solvent evaporate to minimise the chance of attack on the foam.

3. **Canvas and Coarse Woven Cloth.**
   Penetration between the fibres can usually be obtained only when adhesive is applied in a relatively wet state directly to the cloth. Applying a light coat to both surfaces and allowing a short open time results in high immediate strength.

4. **Non-Porous Surface to Non-Porous Surface.**
   Materials such as aluminium foil, plastic films, coated cloth, etc. can best be bonded to metal, plywood, glass and other non-porous substrates by applying a light coat of adhesive to each surface. The surfaces should then be allowed to dry until the solvent has evaporated and then be joined while only slightly tacky to the touch.

Application Techniques	**Brush and Paint Roller Application:** A stiff bristle brush is best for brush applying Scotch Grip Insulation Adhesive 34. Wallpaper paste type brushes are particularly suitable. **If a paint roller is used**, it should be of the type designed for stippling paint. Short, smooth nip rollers will not deposit enough adhesive on a surface due to the unusual viscosity of the adhesive. With these forms of application, the drying rate is generally slower and coverage is reduced.	Brushes and rollers should be immersed in solvent when not in use to prevent drying. **Coverage:** Coverage was determined through actual field application in bonding 0.5kg fibrous glass insulation to galvanised steel. **Average Spray Coat:** 8.4m²/litre. **Average Brush Coat:** 4.7m²/litre.	**Approximate drying or setting time:** One way application light weight material - Immediately. Two way application - 10 minutes to 2 hours. **Temperature Range:** 15°C to 25°C (59°F to 77°F) **Clean Up:** 3M Solvent No. 1. Note: 3M Solvent No. 1 is highly flammable. When using solvents for clean up it is essential that proper safety precautions be observed.
Spray Assemblies Suitable low cost equipment is available from both Binks and DeVilbiss.	**DeVilbiss "Tuffy" Outfit.** **Binks-Bullows No. PR.303E Outfit.** Both of these outfits include a 1/3 h.p. compressor, 2 gallon pressure feed tank and fluid gauge and 3 metres of air and fluid hose. These outfits are especially recommended for portable or intermittent use. Where more accurate control of spray pattern is required, the following guns should be substituted in the above outfits.	DeVilbiss PA-CGA 246FF Binks-Bullows Model L 930 For continuous, high volume work, standard production equipment is recommended. DeVilbiss Model PA-JGA 502 Spray Gun - 35FF Assembly. Model PA-MBC 510 Spray Gun - 35FF Assembly. Binks-Bullows Model 230 Spray Gun 452x66PD Set-up.	These guns will operate from a pressure pot with a minimum 3/4 h.p. compressor or can be used with the following pumps: DeVilbiss 42 Gallon Drum Pump - Model QBH-618A. Binks-Bullows 42 Gallon Drum Pump - Model 41.8554, 3.5:1 ratio Pogo Pump with V.2577A Air Pressure Reducing Valve. Graco 42 Gallon Drum Pump - Model 226.226 *Requires minimum of a 3h.p. compressor.
Storage Conditions	For maximum storage life Scotch-Grip Insulation Adhesive 34 should be stored at temperatures between 16°C and 27°C (60°F and 80°F).	Storage life will be shortened at high storage temperatures. Lower storage temperatures will cause the adhesive to thicken.	When Scotch-Grip Insulation Adhesive 34 has become thickened, due to low temperature storage, it will require warming to at least 16°C (60°F) so that the adhesive will return to the proper viscosity for easy application.

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Applications

Scotch-Grip Insulation Adhesive 34 is being used to bond the following:

Fibrous Glass Insulation.
(0.7 - 2.7kg density).
Liners and wrapping to heating and air conditioning ducts.
Insulations on central and room air conditioner cabinets.
Insulation lining in gas oil furnace cabinets.
Interior and exterior insulation on blower housings.
Interior truck and tractor cab insulation.

Polystyrene Foam.
Preformed pipe insulations.
Foam to refrigerator and freezer interiors.

Insulation lining in pre-fabricated pump houses, farm animal waterers and shelters.
Foam in insulated shipping cartons.
Jacket Insulation for refrigerators.

Felt and Cork.
Sound dampening materials in typewriters, computer cabinets, adding machines, dishwashers, desk pedestals and filing cabinets.
Asphalt impregnated felt in room air conditioners, dehumidifiers and truck cabs.

Protective felt padding in advertising specialities, cabinets and household items.

Polyurethane Foam and Rubber.
Flexible foam to wood and metal office and home furniture.
Gasketing and sound dampening materials to appliances, trucks, tractors, golf cart gas engines and electric motor housings.

Cloth, Paper and Foil.
Grill cloth to speaker closures.
Facing tabs on pre-formed pipe insulation.
Wrapping on paper rolls.
Tabs and covers on corrugated cardboard cartons.

Health & Safety Information

Highly flammable.

Keep away from heat and sources of ignition. No Smoking.

Avoid prolonged breathing of vapours. Use only in well ventilated areas. Avoid contact with eyes and prolonged or repeated skin contact.

First Aid:

Eye Contact:
Rinse immediately with plenty of water and seek medical advice.

Skin Contact :
Wash with soap and water.

If swallowed:
Do not induce vomiting, call a physician immediately.

For further Health & Safety Information, please contact the Toxicology Department at Bracknell Technical Centre on (01344) 860678.

Specifications

Scotch-Grip Insulation Adhesive 34 conforms to British Standard 476 Part 7 1971 Class 1 Spread of Flame.

Warrington Research Centre Ref 9327, and TS 10,046.

Values presented have been determined by standard test methods and are average values not to be used for specification purposes.
Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications.
This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

3M

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