

# 3M™ Structural Isolation Tape SIT2010

## Technical Data Sheet



### General Description

3M™ Structural Isolation Tape SIT2010 is a single-sided, die-cut tape solution designed to help prevent galvanic corrosion, offering serviceability that provides a durable and abrasion resistant isolation layer between dissimilar materials. Optimized for current OEM and tier processes, this material is designed to bond to standard stamping/drawing lubricants without surface treatment and cure in standard e-coat and paint bake oven cycles, offering process flexibility and process efficiency.

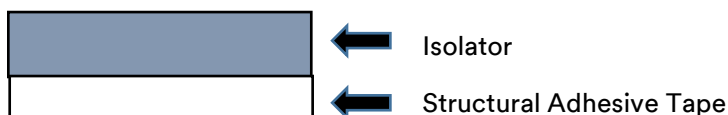
3M SIT2010 offers the potential for:

- Process optimization
  - Optimized to cure in existing automotive bake cycles
  - Automated or manual application to best fit customer processes
  - Bonds to substrates with standard stamping/drawing lubricants, minimizing cleaning requirements
- Design flexibility
  - Customized to fit customer application
  - Easy application to non-flat surfaces
- Bond durability
  - Abrasion resistant isolator
  - Broad service temperature range of -40F to 176F
  - Chemical resistance to most standard automotive fluids
  - Electrically insulating

### Product Construction

3M SIT2010 is composed of two layers:

- An isolation layer that is durable and abrasion-resistant
- A modified epoxy tape layer that structurally bonds to a variety of substrates and surfaces after heat cure



### Physical Properties

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Product	3M SIT2010
<b>Nominal Thickness</b>	0.35 mm
<b>Color</b>	Isolator layer: light gray Structural Adhesive Tape layer: white
<b>Form</b>	Die-cut, individual or on reel

### Application Guidelines

- Compatible with standard stamping/drawing lubricants without surface treatment: compatibility testing of the 3M SIT2010 with application-specific metal lubricants or coatings is recommended.
- Wet-out: When applying 3M SIT2010 onto the component surface, it is important to achieve full wet-out to the substrate. This is dependent on the pressure applied, the method of pressure application, and the temperature of the tape and substrate.
  - Applying tape with a rolling action can help reduce air entrapment between the tape and the component which is essential for achieving full wet out
  - Minimum wet-out required is 15 psi at room temperature.
- Cure profile: Optimized to cure in existing automotive bake cycles (paint-bake and e-coat cure). It's important to verify the full cure of the tape for new applications and after any cure process changes. This can be done using differential scanning calorimetry

For additional application guideline details, contact your 3M Application Engineer.

### Performance Properties

The following performance values are the results of illustrative lab test measures and shall not be considered as a commitment from 3M. The values presented are typical and are not to be used for specification purposes.

These samples have been tested using a wide curing window representative of various paint and e-coat oven bake cycles, ranging from 12 minutes at 140C to 360 minutes at 200C, and up to 50 minutes at 240C.

Temperature		Cure time keep, minutes/ Overlap Shear Strength (MPa)								
C	F	12	18	24	30	40	50	60	120	360
110	230	7.58	10.55	14.51	14.48	28.28	28.18	29.77	28.21	26.55
120	248	10.82	20.42	29.33	30.54	29.09	30.49	29.72	28.58	27.76
130	266	10.31	28.46	29.62	31.13	30.83	29.3	30.69	30.84	27.09
140	284	25.62	27.43	30.65	30.91	32.08	31.36	29.69	27.99	28.97
160	320	28.95	30.94	30.87	29.85	30.31	30.64	31.21	30.63	30.32
180	356	27.33	28.3	27.02	27.97	27.15	27.81	27.54	30.08	29.76
200	392	28.65	27.21	28.79	27.44	26.86	27.29	29.38	28.75	27.65
220	428	24.37	26.04	25.5	25.36	26.25	25.37	25.59	24.35	24.3
240	464	25	23.79	24.55	24.51	25.09	25.14	22.82	24.23	23.88

\*Test method: ASTM D1002, Substrate: Cleaned Aluminum 2024 1.8 mm thickness.

Electrical resistance tested on bare aluminum after cure per ASTM D257

Tape thick(mm)	Volume Resistivity (Ωcm)		Electrical Resistance (Ω)	
	Sample A	Sample B	Sample A	Sample B
	0.386	0.395	0.386	0.395
10v (60s)	7.0E+10	2.3E+11	1.0E+08	3.5E+08
100v (60s)	8.7E+11	2.2E+12	1.3E+09	3.3E+09
1000v (60s)	8.2E+12	2.3E+13	1.2E+10	3.4E+10

### **Storage and shelf life requirements**

**Storage and Shelf Life:** Product has a six month shelf life from date of shipment when stored at  $\leq 23^{\circ}\text{C}$  or  $\leq 74^{\circ}\text{F}$ . It is recommended that parts with an expired shelf life be discarded. A “USE BEFORE” label should be applied to parts shipped to the OEM plant.

Temperature monitor marks are used on packaging to indicate the temperature exposure of the shipment.

### **Regulatory Information**

Please refer to the product label and Safety Data Sheet (SDS) for health and safety information before using. Observe proper handling precautions as outlined in the SDS, which is available on request or at [www.3M.com/msds](http://www.3M.com/msds). To obtain published IMDS ID numbers, email requests to [3M-IMDSrequest@mmm.com](mailto:3M-IMDSrequest@mmm.com).

### **Contact Information**

The information provided in this technical document is intended as a guide for this product. For more information or help in selecting a 3M product for an application, please contact your 3M technical service representative or call 1-800-328-1684.

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