

**Advanced Materials****RenShape<sup>®</sup> BM 5166**

BOARD MATERIAL  
SHEET METAL FORMING TOOLING BOARD

**KEY  
PROPERTIES**

- **Good abrasion resistance**
- **Low coefficient of thermal expansion**
- **Excellent compressive strength**
- **High density**
- **Good heat resistance**
- **Good machinability**

**APPLICATIONS**

- Sheet metal forming tools
- Tooling jigs and fixtures

**PRODUCT DATA**

| Product             | Colour | Test method |
|---------------------|--------|-------------|
| RenShape<br>BM 5166 | Ivory  | Visual      |

**PROPERTIES**

|                                  |           |                                  |             |
|----------------------------------|-----------|----------------------------------|-------------|
| Density                          | ISO 1183  | g/cm <sup>3</sup>                | 1.7         |
| Hardness                         | ISO 868   | Shore D                          | 85 - 90     |
| Coefficient of thermal expansion | ISO 11359 | 10 <sup>-6</sup> k <sup>-1</sup> | 45 - 50     |
| Deflection temperature           | ISO 75    | °C                               | 75 - 80     |
| Compressive strength             | ISO 604   | MPa                              | 90 - 100    |
| Compressive modulus              | ISO 604   | MPa                              | 7000 - 7500 |
| Flexural strength                | ISO 178   | MPa                              | 55 - 65     |

**BONDING**

|                      |                        |  |
|----------------------|------------------------|--|
| <b>System</b>        |                        | <b>Araldite<sup>®</sup> AW 106<br/>HV 953U</b> |
| <b>Appearance</b>    | <b>Visual</b>          | Transparent                                    |
| <b>Mix ratio</b>     | <b>Parts by weight</b> | 100 : 60                                       |
| <b>Pot Life</b>      | <b>min</b>             | 60 - 90  |
| <b>Clamping time</b> | <b>h</b>               | 12   |

**Notes:** Sheet metal forming

**REPAIR**

|                         |                        |   |   |
|-------------------------|------------------------|---|---|
| <b>System</b>           |                        | <b>Araldite<sup>®</sup> AV 5308<br/>HV 5309-1</b> | <b>RenPIM<sup>®</sup> 5219 A/B<br/>RenPIM<sup>®</sup> 5217 B<br/>DT 082</b> |
| <b>Appearance</b>       | <b>visual</b>          | Beige thixotropic                                 | Beige thixotropic   |
| <b>Mix ratio</b>        | <b>Parts by weight</b> | 100 : 100   | 80 : 50 : 50 : 500  |
| <b>Pot life at 25°C</b> | <b>min</b>             | 30 - 40   | 2 - 3   |
| <b>Cure time</b>        | <b>h</b>               | 15  | 2 - 3   |

**Notes:** Alternatively repair with adhesive bonded insert.

Araldite AW 106 and HV 953U are supplied in smaller packs than Araldite 2011.

Araldite AV 5308 and HV 5309 are supplied in smaller packs than Araldite 2015.

**MILLING**

Milling parameter available on request.

**STORAGE**

Board material may be stored flat in original cartons at 20o to 40o C in a dry area. Temperature variations should be avoided when transporting and storing board material.

**WORKING  
CONDITION**

The product should be used when in the temperature range 20o to 25o C.

**PACKAGING**

| <b>Dimensions (mm)</b> | <b>Volume (l)</b> | <b>Weight (kg)</b> | <b>Number of Boards<br/>(per pack)</b> | <b>Number of Boards<br/>(per pallet)</b> |
|------------------------|-------------------|--------------------|--|--|
| 750 x500X 50           | 16                | 26 - 30            | 2                                      | 24                                       |
| 750 x500x100           | 32                | 53 - 56            | 1                                      | 12                                       |

**HANDLING  
PRECAUTIONS**

Caution

Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data sheets for the individual products and should be referred to for fuller information.

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Main Office :  
**Huntsman Advanced Materials (Switzerland) GmbH**  
Klybeckstrasse 200  
CH-4057 BASEL  
Switzerland  
+41 61 966 3333