

# Polymer Testing Laboratory

NATA Accreditation No. 10064

## Procedures and Standards

### Testing Procedure Method Identification

### Standard Test Procedure Reference

#### Adhesive Testing

|  |                |
|--|----------------|
| Adhesive Tape testing  | AS 1635        |
| Coating Adhesion Strength  | AS 1441.5      |
| Low Speed Release Force  | FINAT No. 3    |
| Peel Adhesion  | FINAT No. 1    |
| Peel Cling   | ASTM D 5458    |
| Pressure Sensitive Adhesive-Coated<br>Tapes used for Electrical and<br>Electronic Applications | ASTM D 1000-04 |

#### Hardness Testing

|                               |             |
|-------------------------------|-------------|
| Barcol Hardness               | ASTM D 2583 |
| Shore A Hardness              | ASTM D 2240 |
| Shore D Hardness              | ASTM D 2240 |
| Rockwell Hardness of Plastics | ASTM D 785  |

#### Tension Testing

|                                     |             |
|-------------------------------------|-------------|
| Breaking Force and Extension        | AS 2001.2.3 |
| Breaking Strength of Coated Fabrics | ASTM D 751  |
| Geomembrane Testing                 | ASTM D 4437 |
| (Shear & Peel Testing)              | ASTM D 6398 |
| Plastics Pipe Butt Weld Strength    | MIWA        |

|  |  |
|--|--|
| Tensile Properties of Plastic Sheeting | ASTM D 882   |
| Tensile Properties of Plastics         | ASTM D 638M/<br>ASTM D638 ISO 527 - 1, ISO 527 - 2<br>AS 1145 - 1, AS 1145 - 2 |

#### Impact Testing

|   |                              |
|---|------------------------------|
| Charpy Impact Strength                    | ISO 179                      |
| Falling Aggregate Impact                  | CSIRO Method                 |
| Impact Resistance of Plastics             | ASTM D 256                   |
| Impact Resistance of Polyethylene<br>Film | ASTM D 1709<br>AS/NZS 4347.6 |
| Impact Strength                           | ASTM D 3029                  |
| Penetration Test of Polymeric Cable       | AS4702: 2000                 |
| Protection Covers                         | Clause 8.2                   |

#### Tear Testing

|   |                            |
|---|----------------------------|
| Initial Tear Resistance                     | ASTM D 1004                |
| Tear Resistance of Woven Fabrics            | AS 2001.2.10               |
| Tear Resistance                             | ASTM D 1922<br>ASTM D 1938 |
| Tear Strength of Reinforced<br>Geomembranes | ASTM D 5884                |

#### Puncture Testing

|  |                 |
|--|-----------------|
| Bursting Force of Textile Fabrics      | AS 2001.2.19    |
| Puncture Resistance                    | ASTM D 4649 (M) |
| Puncture Resistance of<br>Geomembranes | ASTM D 4833     |
| Resistance to Puncture                 | ASTM E 154      |

#### Bend/Compression Testing

|  |                       |
|--|-----------------------|
| Compression Resistance of<br>Fibreboard Boxes                        | AS 1301.800S          |
| Flexural Properties of Plastics                                      | ASTM D 790<br>ISO 178 |
| Heat Deflection Temperature  | ASTM D 648            |
| Initial Ring Stiffness of Glass Filament<br>Reinforced Plastic Pipes | AS 3572.10            |
| Pipe Stiffness   | AS 1462.22            |
| Ring Flexibility   | AS 1462.23            |

#### Flammability Testing

|                        |   |
|------------------------|---|
| Flammability           | UL94<br>Mitsubishi ES-X60410<br>TSM0500G<br>FMV SS302 |
| Glow Wire Flammability | AS/NZS 60685.2.10                                     |

#### Thermal Testing

|   |  |
|---|--|
| Melt Flow Rates of<br>Thermoplastics        | ASTM D 1238/ISO 1133<br>AS/NZS 1660.2.4. |
| Gel Time and Peak Exothermic<br>Temperature | ASTM D 2471                              |
| Oxygen Induction Time                       | ASTM D 4565.17/AS 1049                   |
| Oxygen Induction Time                       | ISO TR 10837                             |
| Rheological Properties                      | ASTM D 3835                              |



Thermal Properties  
(Melting Point, Glass Transition Temperature) ASTM D 3418  
Heat Deflection Temperature ASTM D 648  
Vicat Softening Temperature of  
Plastics ASTM D 1525  
ISO 306

### Chemical Testing

AEX Gel Molar Fraction TYCAB Method  
AVX Gel Molar fraction TYCAB Method  
Degree of Cross-linking of  
PE-X Pipes AS 2492 -2007  
(ISO 10147)

Degree of Cross-linking on  
Polyethylene ASTM D 2765  
Environmental Stress Cracking  
Resistance AS 2698 Appendix D  
Environmental Stress Cracking  
Resistance ASTM D 1693  
Plasticiser Content of PVC  
Compounds ASTM D 2124 .8.2  
Surface Tension ASTM D 2578

### Other Tests

Agglomerate and Particle Size AS/NZS 1462.28  
Pigment Dispersion AS/NZS 1462.28  
Carbon Black Content of PE  
Compounds ASTM D 4218  
Carbon Fibre Content ESPRC Method

Filler Content ASTM D 2584  
Glass Fibre Content ASTM D 2584  
Co-efficient of Friction ASTM D 1894

Dimensional Stability ASTM D 1204

Shrinkage from Mould Dimensions  
of Thermoplastics ASTM D 955  
Shrinkage of Polypropylene  
Ribbon Pirrelli Standard

Fusion of PVC Compounds ASTM D 2538

Gloss ASTM D 2457  
Haze and Luminous Transmittance ASTM D 1003  
Moisture Content Brabender Method  
Volatile Loss from Plastics ASTM D 1203

Preparation of Infrared Spectra  
Sharps Container Testing AS 4261  
Specific Gravity and Density of Plastics ASTM D 792  
Viscosity of Epoxy Resins (Brookfield) ASTM D 2393  
Volatility AS 2324  
Water Vapour Transmission Rate ASTM E 96

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