



# TECHNICAL DATA SHEET

Document number: TTDS-032  
Issue: 2  
Date: August 2014

## RayMark Six Labels

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MATERIAL DESCRIPTION:</b>          | Computer-printable zero halogen label material. Permanent pressure sensitive acrylic adhesive. Thermally stabilised white polyester film with special ink receptive latent cure epoxy coating on the label surface. After printing, the surface is heat cured, embedding the image within a tough polymeric layer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>USE:</b>                           | RayMark Six labels have outstanding abrasion and fluid resistance without the need for an overlay. Ideal for applications where high performance variable data labels are needed, for example in defence, marine, rail and aerospace applications. Can be used as a wire/cable wraparound marker for substrates not less than 6mm (0.25 inches) diameter. Not recommended for outdoor use.                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>PRINTING SYSTEM</b>                | <p>Print Quality and Print Performance can only be guaranteed when specific TE printer and ribbons are used.</p> <p>The current list of printers and ribbons can be found in TE document 411-121005 'Identification Printer Product Ribbon Matrix'</p> <p>This document can be found at the TE document centre:<br/><a href="http://www.te.com/commerce/DocumentDelivery/DDEController">http://www.te.com/commerce/DocumentDelivery/DDEController</a></p> <p>Raymark is fully supported by WINTOTAL and PrintEasy label printing software, available from the TE product store:<br/><a href="http://www.te.com/en/general/label-printing-software.html">http://www.te.com/en/general/label-printing-software.html</a></p> <p>Contact a TE representative for further information</p> |
| <b>CURING CONDITIONS:</b>             | 5 minutes at 150°C (302°F) in an air circulating oven.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>SHELF LIFE/STORAGE CONDITIONS:</b> | <p>Can be stored unopened for 12 months at temperatures not exceeding 35°C (95°F).</p> <p>Once opened, product should be stored below 25°C (77°F) and 80% relative humidity and used within 6 months.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>SERVICE TEMPERATURE:</b>           | <p>Wiring marking: -40°C to +85°C (-40°F to +185°F) continuous.</p> <p>Panel marking: -40°C to +105° (-40°F to +221°F) continuous.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>INSTALLATION TEMP:</b>             | +10°C to +40°C (+50°F to +104°F).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>COLOURS:</b>                       | White.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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| Property                  | Test Method                                                                                                                                                                            | Required                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Fungus Resistance         | BS EN 60068-2-10:2005<br>Print Legibility TE108-121012                                                                                                                                 | Rating 1 (max)<br>Legible, print contrast >3    |
| Light fastness, xenon arc | 250 hour, ASTM G155-05a<br>Print Legibility TE108-121012<br>Adhesion to aluminium plate TE 108-121030                                                                                  | Legible, print contrast >3<br>20N/25mm adhesion |
| Continuous humidity       | 168h, 40°C (104°F)/95% RH<br>Print Legibility TE108-121012<br>Adhesion to aluminium plate TE 108-121030                                                                                | Legible, print contrast >3<br>15N/25mm adhesion |
| Thermal ageing            | 168h at 150°C (302°F)<br>Print Legibility TE108-121012<br>Adhesion to aluminium plate TE 108-121030                                                                                    | Legible, 30N/25mm adhesion                      |
| Thermal cycling           | 4 hours at -55°C (-67°F)<br>4 hours at 25°C (77°F)<br>4 hours at 150°C (302°F)<br>4 hours at 25°C (77°F)<br>Print Legibility TE108-121012<br>Adhesion to aluminium plate TE 108-121030 | Legible, 25N/25mm adhesion                      |
| Dry abrasion resistance   | TE 109-121020<br>500 cycles, 500g, CS10 wheel                                                                                                                                          | Legible, print contrast >3                      |
| <u>180° Adhesion to:</u>  |                                                                                                                                                                                        |                                                 |
| Stainless steel           |                                                                                                                                                                                        | 15 N/25mm                                       |
| Aluminium                 |                                                                                                                                                                                        | 20 N/25mm                                       |
| Acrylic painted surface   | TE 109-121030                                                                                                                                                                          | 20 N/25mm                                       |
| ABS                       |                                                                                                                                                                                        | 20 N/25mm                                       |
| Nylon                     |                                                                                                                                                                                        | 15 N/25mm                                       |
| PVC                       |                                                                                                                                                                                        | 15 N/25mm                                       |

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### MARK PERMANENCE:

| Fluid                                                                                                                                                                             | Test Method                                                               | Required                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>MIL STD 202G Method 215</b><br>Solvent A<br>Solvent B<br>Solvent D                                                                                                             | TE 109-121014<br>30 strokes, toothbrush                                   | Legible, print contrast >3                                   |
| <b>Fluid Resistance</b>                                                                                                                                                           |                                                                           |                                                              |
| 100°C, 2 hours: <ul style="list-style-type: none"><li>Water</li></ul>                                                                                                             |                                                                           |                                                              |
| 50°C, 24 hours: <ul style="list-style-type: none"><li>Lubricating Oil O-149</li><li>Salt water solution (3.5% mass/mass)</li></ul>                                                | Mark permanence and 180° Peel test to aluminium substraight               |                                                              |
| 23°C, 24 hours: <ul style="list-style-type: none"><li>White Spirit</li><li>Iso Propyl Alcohol</li><li>Ethylene Glycol</li><li>Hydraulic Fluid H-515</li><li>Diesel Fuel</li></ul> | Immersion, followed by Print Permanence, TE 109-121012, 20 rubs, 1kg load | Print legible, minimum print contrast 3<br>10 N/25mm minimum |
| 23°C, 1 hour: <ul style="list-style-type: none"><li>Skydrol 500B4</li></ul>                                                                                                       | Immersion followed by 180° peel test, TE 109-121030                       |                                                              |

Further information and availability can be found through the TE Cable Identification web site:  
<http://www.te.com/catalog/labels-identification/menu/en/12933?BML=10576>

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