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| --- | --- | --- | --- | --- |
|  | FDOT Traffic Engineering Research Laboratory (TERL)  Vehicular Traffic Signal Assembly Backplate Compliance Matrix | By signing this form, the applicant declares that he/she has read and understands the provisions of Sections 650 and 995 of the FDOT *Standard Specifications for Road and Bridge Construction* and all implemented modifications. The requirements listed on this matrix are derived from Sections 650 and 995, and are the basis for determining a product’s compliance and its acceptability for use on Florida’s roads. |  |  |

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| --- | --- | --- | --- |
| Date: | Click here to enter a date. | Applicant’s  Name (print): |  |
| Manufacturer: |  |  |  |
| Item, Model No.: |  | Signature: |  |

|  |  | **\*\* Greyed out rows in table below are for TERL use only \*\*** |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID No** | **Section** | **Requirement** | **Item Comply? (Yes/No/NA)** | **Comments (Applicant must provide information as indicated)** | **TERL Evaluation Method** |
| The following compliance matrix criteria are for all backplates. | | | | | |
| 1 | 995-1.1 | All equipment is permanently marked with manufacturer name or trademark, part number, and date of manufacture or serial number. |  | *Applicant may provide comments in this field.* | Physical Inspection |
|  |  | TERL Test Cases (Steps): BP002 (Step 1) |  |  | Init.: |
| The following compliance matrix criteria are for aluminum backplates. | | | | | |
| 2 | 995-4.2.5 | Backplates are powder coated dull black (Federal Standard 595-37038) with a reflectance value not exceeding 25 percent as measured by ASTM E1347. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 1), BP002 (Step 2) |  |  | Init.: |
| The following compliance matrix criteria are for plastic backplates. | | | | | |
| 3 |  | Plastic backplates have black color incorporated into the plastic material before molding. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 2), BP002 (Step 3) |  |  | Init.: |
| The following compliance matrix criteria are for aluminum backplates. | | | | | |
| 4 |  | All surfaces of the backplate are powder-coated in accordance with Military Standard MIL-PRF-24712A or American Architectural Manufacturers Association-2603-02. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 3) |  |  | Init.: |
| 5 |  | The finish meets the requirements of the American Society for Testing and Materials (ASTM) D 3359, ASTM D 3363, and ASTM D 522. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 4) |  |  | Init.: |
| 6 |  | Surface erosion, flaking, or oxidation will not occur within the normal life expectancy under typical installation conditions. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 5) |  |  | Init.: |
| The following compliance matrix criteria are for all backplates. | | | | | |
| 7 | 995-4.2.7 | Backplate is constructed of aluminum or plastic. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 6), BP002 (Step 4) |  |  | Init.: |
| 8 |  | If aluminum, backplate minimum thickness is 0.060 inch. If plastic, backplate minimum thickness is 0.120 inch. Minimum thickness measurement does not include retroreflective sheeting thickness. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 7), BP002 (Step 5) |  |  | Init.: |
| 9 |  | The top, bottom, and sides of the backplate measures from five to six inches in width. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 8), BP002 (Step 6) |  |  | Init.: |
| 10 |  | The color of the backplate is black in accordance with 995-4.2.5. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 9) |  |  | Init.: |
| 11 |  | Backplates that are mechanically attached have a minimum of four corner mounting attachment points per signal section (i.e., a three-section signal assembly would have 12 mounting points). |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 10), BP002 (Step 7) |  |  | Init.: |
| 12 |  | Backplate does not interfere with the operation of traffic signal section doors. |  | *Applicant may provide comments in this field.* | Physical Inspection |
|  |  | TERL Test Cases (Steps): BP002 (Step 8) |  |  | Init.: |
| 13 |  | Outside corners on the backplate are rounded and all edges de-burred. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 11), BP002 (Step 9) |  |  | Init.: |
| 14 |  | For backplates that include louvers, the louvers are no closer than ½ inch from the inner or outer edge of the back-plate panel. Louver orientation is vertical on sides and horizontal on top and bottom. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 12), BP002 (Step 10) |  |  | Init.: |
| 15 |  | If backplate is designated universal, it fits all FDOT-approved traffic signals. |  | *Applicant may provide comments in this field.* | Physical Inspection |
|  |  | TERL Test Cases (Steps): BP002 (Step 11) |  |  | Init.: |
| 16 |  | Backplates include Type 316 or 304 passivated stainless-steel screws, washers, and other installation hardware required to mount it securely to a signal assembly. |  | *Provide statement of conformance from hardware supplier that shows the product meets this requirement.* | Document Review |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 13) |  |  | Init.: |
| 17 |  | Backplates that are mechanically attached must be marked in accordance with 995-1 (above), on the long sides of the backplate. |  | *Applicant may provide comments in this field.* | Physical Inspection |
|  |  | TERL Test Cases (Steps): BP002 (Step 1) |  |  | Init.: |
| 18 |  | Backplates include retroreflective borders using Type IV yellow retroreflective sheeting listed on the APL. |  | *Indicate Approved Product List number(s) in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 14) |  |  | Init.: |
| 19 |  | Retroreflective border is a 2-inch border on the entire outer perimeter of the backplate panel and is no closer than ½ inch from any louvers. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Physical Inspection |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 15), BP002 (Step 12 & 13) |  |  | Init.: |
| 20 |  | All materials are designed for exterior use and are UV stable. |  | *Provide product literature, specifications, user manual,or similar information that shows the product meets this requirement.* | Document Review |
|  |  |  |  | *Indicate location of requested information in submittal.* |  |
|  |  | TERL Test Cases (Steps): BP001 (Step 16) |  |  | Init.: |
| The following compliance matrix criteria are for flexible backplates. | | | | | |
| 21 | 995-4.2.7.1 | Flexible backplates allow the entire length of longer portions of the backplate to flex 90 degrees, or until the backplate width is reduced to 2.5 inches or less, when influenced by high wind conditions, and return to zero degrees after the wind conditions subside. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review and Physical Inspection |
|  |  | TERL Test Cases (Steps): BP001 (Step 17), BP002 (Step 14) |  |  | Init.: |
| 22 |  | Flexible backplate maintains visibility of the retroreflective border to approaching traffic, with up to 40 mph winds. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 18) |  |  | Init.: |
| 23 | 650-4 | Signal housings, backplates, and any other signal assembly components have a manufacturer’s warranty covering defects for a minimum of three years from the date of final acceptance in accordance with 5-11 and Section 608. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 19) |  |  | Init.: |
| 24 |  | Warranty includes providing replacements, within 30 calendar days of notification, for defective parts and equipment during the warranty period at no cost to the Department or the maintaining agency. |  | *Provide a statement of conformance in this field.* | Compliance Matrix Review |
|  |  | TERL Test Cases (Steps): BP001 (Step 20) |  |  | Init.: |

**Document History for:**

**Vehicular Traffic Signal Assembly Backplate Compliance Matrix**

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| --- | --- | --- | --- | --- | --- | --- |
| Rev | Description | Authored and Checked | Reviewed | Approved | Approval Date | Rev More Stringent? |
| 1.0 | Update CM to reflect changes from A650 of MSTCSD to 650 of SSRBC. Revised document approver title. | R. Meyer  A. Burleson | J. Morgan | J. Morgan | 10/27/2014 | No |
| 2.0 | Update to latest FA date (12-23-14). No criteria change. | D. Bremer | J. Morgan | J. Morgan | 09/09/2015 | No |
| 3.0 | Updated to match latest FA date (8/01/2019). No content changes made. | J. Morgan | J. Morgan | D. Vollmer | 10/29/2019 | No |
| 4.0 | Added language to include flexible backplates. | W. Geitz | M. DeWitt  C. Raimer | D. Vollmer | 12/29/2020 | No |
| 5.0 | Moved division 2 to the 995 Specification. Also added warranty information. | W. Geitz | M. DeWitt  C. Raimer | D. Vollmer | 12/28/2021 | No |
| 6.0 | Updated to the latest FA Date 10-24-22. Added test cases and steps. | W. Geitz  S. Cook | D. Bremer  R. Washington  W. Geitz | D. Vollmer | 06/05/2023 | No |