**pEDESTRIAN sIGNAL ASSEMBLY**

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Approved/Issued by: Jeff Morgan, Product Certification Manager

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| REV. | DATE | DESCRIPTION | AUTHORED BY | REV MORE STRINGENT? |
| --- | --- | --- | --- | --- |
| 1.0 | 02/05/2015 | Initial Standard Specification 653 version of matrix corresponding to FA date of 9-16-2014. | David Bremer | No |
| 1.1 | 02/05/2015 | Included changes to specification. | David Bremer | No |
| 2.0 | 08/18/2015 | Updating to latest FA date (8/11/2015). Changing Identifier. Includes TERL modifications to 2.4, but not to 2.2. No additional content changes made since 1.1. | David Bremer | No |
| 3.0 | 09/11/2018 | Included visor/egg create specification to reflect changes to FA date of 8/23/2018.  | Rod Brooks | No |
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|  | FDOT Traffic Engineering Research Laboratory (TERL) Pedestrian Signal Assembly Compliance Matrix | By signing this form, the applicant declares that he/she has read and understands the provisions of Section 653 of the FDOT *Standard Specifications for Road and Bridge Construction* and all implemented modifications. The requirements listed on this matrix are derived from Section 653, 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: |       |

| **ID No** | **Section** | **Requirement** | **Item Comply? (Yes/No)** | **Comments(Applicant must provide information as indicated)** | **TERL Evaluation Method** |
| --- | --- | --- | --- | --- | --- |
| The following compliance matrix criteria are for all pedestrian assemblies |
| 1 | 653-1 | Pedestrian signal assembly meets the requirements of section 603. |  | *Provide a third party test report that demonstrates compliance with this requirement. The test report must meet the requirements of FDOT Product Certification Handbook, section 7.2.* | Document Review |
| *Indicate location of requested information in submittal.* |
| 2 | 653-2.1 | Pedestrian signal assembly meets the requirements of the latest edition of the Federal Highway Administration’s (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) and the Institute of Transportation Engineers (ITE) standard for Pedestrian Traffic Control Signal Indications. |  | *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.* |
| 3 | 653-2.2 | The housing is weatherproof. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 4 |  | The housing is sectional and may consist of many sections. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 5 |  | The housing prevents light from escaping from one unit to another. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 6 |  | The top and bottom opening of the housing includes a circular 72-tooth serrated connection (2 inch nominal I.D.) capable of providing positive positioning and alignment in 5 degree increments. |  | *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.* |
| 7 |  | When assembled and tightened, these serrations prevent rotation or misalignment. The serrated area starts at the outside of the 2 inch hole and is at least 1/8 inch wide.  |  | *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.* |
| 8 |  | The teeth have a minimum depth of 3/64 inch between peaks and valleys, are free from burrs or other imperfections, and provide positive locking with the grooves of mating sections, framework, and brackets. |  | *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.* |
| 9 |  | The serration on the top circular connection of a signal section has a valley at the 0 degree position and the serration on the bottom circular connection has a peak at the 0 degree position, both aligned perpendicular to the front of the section. |  | *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.* |
| 10 |  | Housing includes a minimum of two latch pads and manual stainless steel latching devices that are captive, or non-removable.  |  | *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.* |
| 11 |  | All mounting points and adjacent housing material is reinforced. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 12 |  | The door enclosing the lens is hinged and held securely to the housing. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 13 |  | Unless the fitting between the housing and the door is weather-tight, a gasket meeting the requirements of ASTM D1056, Grade 2B2, is provided between the housing and door and between the lens and door.  |  | *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.* |
| 14 |  | Each signal face includes a light-proof visor that is three-sided and extends a minimum of 7 inches at the top. The visor is constructed of noncorrosive sheet metal a minimum of 0.05 inch thick, (No. 18 gauge in thickness) or polycarbonate 0.1 inch thick. |  | *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.* |
| 15 |  | Provide a visor or egg-create louver that eliminates sun phantom for each signal face. Visor must be three-sided and extend a minimum of 7 inches at the top from the face of the lens. The visor must be constructed of noncorrosive No. 18 gauge sheet metal, no less than 0.05-inch-thick, or 0.1-inch-thick polycarbonate. |  | *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.* |
| 16 |  | All metal housings and visors are powder-coat painted black in accordance with Military Standard MIL-PRF-24712A or AAMA-2603-02 and have a reflectance value not exceeding 25 percent as measured by ASTM E97. Polycarbonate heads are black in color which is incorporated into the material before the molding process. |  | *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.* |
| 17 |  | The housing is constructed of a non-corrosive material. Cast metal parts have a minimum tensile strength of 1 ksi (117 MPa) and sheet metal parts have a minimum tensile strength of 27 ksi (186 MPa). |  | *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.* |
| The following compliance matrix criteria are for die castings |
| 18 | 653-2.2.1 | Alloy meets the physical characteristics and chemical content requirements in ASTM B85 for alloys S12A, S12B, SC84A, SC84B, SG100A and SG100B. |  | *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.* |
| The following compliance matrix criteria are for sand castings |
| 19 | 653-2.2.2 | Alloy meets the physical characteristics and chemical content requirements in ASTM B26 for alloys S5A and CS72A. |  | *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.* |
| The following compliance matrix criteria are for permanent mold castings |
| 20 | 653-2.2.3 | Alloy meets the physical characteristics and chemical content requirements in ASTM B108 for alloys S5A and CS72A. |  | *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.* |
| The following compliance matrix criteria are for polycarbonate assemblies |
| 21 | 653-2.2.4 | Polycarbonate housing components are molded from ultraviolet stabilized polycarbonate plastic with a minimum thickness of 0.1 inches, plus or minus 0.01 inch. |  | *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.* |
| 22 |  | Polycarbonate housing material physical properties meet:a) Specific Gravity of 1.17 per ASTM D 792,b) Vicat Softening Temp range 305-325°F per ASTM D 1525,c) Brittleness Temp is below -200°F per ASTM D 746,d) Flammability is self-extinguishing per ASTM D 635,e) Tensile Strength yield is 8500 psi per ASTM D 638,f) Elongation at yield is 5.5 – 8.5%per ASTM D 638,g) Shear Strength yield is 5500 psi per ASTM D 732,h) Izod impact strength is 15 ft-lb/in per ASTM D 256, and i) Fatigue strength is 950 psi at 2.5 mm cycles per ASTM D 671 |  | *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.* |
| The following compliance matrix criteria are for LED pedestrian signal modules |
| 23 | 653-2.3 | Countdown pedestrian signal module meets the requirements of the latest ITE LED Pedestrian Signal Specifications. |  | *Provide a third party test report that demonstrates compliance with this requirement. The test report must meet the requirements of FDOT Product Certification Handbook, section 7.2.* | Document Review |
| *Indicate location of requested information in submittal.* |
| The following compliance matrix criteria are for all pedestrian assemblies |
| 24 | 653-2.4 | Wiring and terminals meet the current ITE Pedestrian Traffic Control Signal Indicators specification for size, insulation, length and color-coding. No bare wiring exposed where wires are secured. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 25 |  | The pedestrian signal includes a terminal block containing a minimum of five circuits, each with two noncorrosive screw-type terminals. Each terminal accommodates three No. 18 AWG conductors and is labeled for ease of identification. The terminal block is not obstructed and is visible when the housing is open. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 26 | 653-2.5 | All brackets used to mount pedestrian signals are an aluminum alloy cast fitting, pipe or equivalent material approved by the Department. |  | *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.* |
| 27 |  | Aluminum and aluminum alloy bars, rods, wires, profiles, and tubes meet ASTM B221. Aluminum-alloy sand casting meets ASTM B26. All mounting hardware is painted black with a reflectance value not exceeding 25 percent as measured by ASTM E97. |  | *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.* |
| 28 |  | All assembly hardware less than 5/8 inch in diameter, are Type 304 or 316 passivated stainless steel. Stainless Steel bolts, screws and studs meet ASTM F593. Nuts meet ASTM F594. |  | *Provide statement of conformance from hardware supplier that shows the product meets this requirement.* | Document Review |
| *Indicate location of requested information in submittal.* |
| 29 |  | All assembly hardware greater than or equal to 5/8 inch in diameter is galvanized. Bolts, studs, and threaded rod meet ASTM A307. Structural bolts meet ASTM A325. |  | *Provide statement of conformance from hardware supplier that shows the product meets this requirement.* | Document Review |
| *Indicate location of requested information in submittal.* |