



Florida Department of Transportation

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605 Suwannee Street
Tallahassee, FL 32399-0450

MIKE DEW
SECRETARY

August 20, 2018

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **653**
Proposed Specification: **6530202 Pedestrian Signal Assemblies. REVISED**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification. Changes (**highlighted**) were made in response to comments by Frank Corrado.

The changes are proposed by Jeff Morgan of the State Traffic Engineering Research Lab (TERL) to modify the language.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to dan.hurtado@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Dan Hurtado, P.E.
State Specifications Engineer

DH/dt

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

PEDESTRIAN SIGNAL ASSEMBLIES.**(REV ~~5-14-18~~ 8-20-18)**

SUBARTICLE 653-2.2 is deleted and the following substituted:

653-2.2 Housing and Visor: The housing must be weatherproof, sectional and may consist of as many sections as optical units. The housing must prevent light from escaping from one unit to another. The top and bottom opening of the housing must include a circular 72-tooth serrated connection (2 inch nominal I.D.) capable of providing positive positioning and alignment in 5 degree increments. When assembled and tightened, these connections must prevent rotation or misalignment. The serrated area must start at the outside of the 2 inch hole and be at least 1/8 inch wide. The teeth must have a minimum depth of 3/64 inch between peaks and valleys, free from burrs or other imperfections, and provide positive locking with the grooves of mating sections, framework, and brackets. The serration on the top circular connection of a signal section must have a valley at the 0 degree position and the serration on the bottom circular connection must have a peak at the 0 degree position, both aligned perpendicular to the front of the section. Housings must include latch pads and manual stainless steel latching devices that are captive, or non-removable. Housings must have at least two latching points.

Reinforce all mounting points and adjacent housing material. The door enclosing the lens must be hinged and held securely to the housing. Provide a gasket meeting the requirements of ASTM D1056, Grade 2B2 between the housing and door and between the lens and door. If the fitting between the housing and door is weather-tight, the gasket may be omitted.

Provide a visor or egg-crate louver that eliminates sun phantom for each signal face. ~~Light must not escape between the door and visor. The v~~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, not less than 0.05 inch thick, (~~No. 18 gauge in thickness~~) or 0.1 inch thick polycarbonate.

All metal housings and visors must be powder-coat painted black in accordance with Military Standard MIL-PRF-24712A or AAMA-2603-02 with a reflectance value not exceeding 25 percent as measured by ASTM E97. For polycarbonate heads, the black color must be incorporated into the material before the molding process.

The housing must be constructed of a non-corrosive material. Cast metal parts must have a minimum tensile strength of 1 ksi (117 MPa) and sheet metal parts a minimum tensile strength of 27 ksi (186 MPa).

653-2.2.1 Die eCastings: Meet the requirements in ASTM B85 for the physical characteristics and chemical content for alloys S12A, S12B, SC84A, SC84B, SG100A and SG100B.

653-2.2.2 Sand Castings: Meet the requirements in ASTM B26 for the physical characteristics and chemical content for alloys S5A and CS72A.

653-2.2.3 Permanent mMold eCastings: Meet the requirements in ASTM B108 for the physical characteristics and chemical content for alloys S5A and CS72A.

653-2.2.4 Polycarbonate: Polycarbonate housing assemblies, doors and visors must be molded from ultraviolet stabilized polycarbonate plastic with a minimum thickness of 0.1 inches, plus or minus 0.01 inch, and provide the following physical properties:

Table 1

Test	Minimum Requirement	Method
Specific Gravity	1.17	ASTM D 792
Vicat Softening Temp.	305-325°F (152 – 163°C)	ASTM D 1525
Brittleness Temp.	Below -200°F (-129°C)	ASTM D 746
Flammability	Self-extinguishing	ASTM D 635
Tensile Strength	Yield, 8500 psi (58 MPa)	ASTM D 638
Elongation at yield	5.5 - 8.5%	ASTM D 638
Shear Strength	Yield, 5500 psi (38 MPa)	ASTM D 732
Izod impact strength	15ft-lb/in (800 J/m)	ASTM D 256
Fatigue strength	950 psi (6.5MPa) at 2.5 mm cycles	ASTM D 671

SUBARTICLE 653-2.4 is deleted and the following substituted:

653-2.4 Electrical: Wiring **and terminals** must ~~be color-coded No. 18 AWG or larger, stranded wires with an approved 600 V outdoor insulation rating or equivalent~~ **meet the size, insulation, length and color-coding of the current ITE Pedestrian Traffic Control Signal Indicators LED specification.** Wires must ~~be a minimum of 3 feet long with self-insulating slide-on terminals with not~~ **have** bare wiring exposed where wires are secured.

The pedestrian signal must include a terminal block containing a minimum of ~~five~~**three** circuits, each with two noncorrosive screw-type terminals. Each terminal must accommodate three No. 18 AWG conductors and be labeled for ease of identification. The terminal block must not be obstructed and be visible when the housing is open.

PEDESTRIAN SIGNAL ASSEMBLIES.**(REV 8-20-18)**

SUBARTICLE 653-2.2 is deleted and the following substituted:

653-2.2 Housing and Visor: The housing must be weatherproof, sectional and may consist of as many sections as optical units. The housing must prevent light from escaping from one unit to another. The top and bottom opening of the housing must include a circular 72-tooth serrated connection (2 inch nominal I.D.) capable of providing positive positioning and alignment in 5 degree increments. When assembled and tightened, these connections must prevent rotation or misalignment. The serrated area must start at the outside of the 2 inch hole and be at least 1/8 inch wide. The teeth must have a minimum depth of 3/64 inch between peaks and valleys, free from burrs or other imperfections, and provide positive locking with the grooves of mating sections, framework, and brackets. The serration on the top circular connection of a signal section must have a valley at the 0 degree position and the serration on the bottom circular connection must have a peak at the 0 degree position, both aligned perpendicular to the front of the section. Housings must include latch pads and manual stainless steel latching devices that are captive, or non-removable. Housings must have at least two latching points.

Reinforce all mounting points and adjacent housing material. The door enclosing the lens must be hinged and held securely to the housing. Provide a gasket meeting the requirements of ASTM D1056, Grade 2B2 between the housing and door and between the lens and door. If the fitting between the housing and door is weather-tight, the gasket may be omitted.

Provide a visor or egg-crate 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, not less than 0.05 inch thick, or 0.1 inch thick polycarbonate.

All metal housings and visors must be powder-coat painted black in accordance with Military Standard MIL-PRF-24712A or AAMA-2603-02 with a reflectance value not exceeding 25 percent as measured by ASTM E97. For polycarbonate heads, the black color must be incorporated into the material before the molding process.

The housing must be constructed of a non-corrosive material. Cast metal parts must have a minimum tensile strength of 1 ksi (117 MPa) and sheet metal parts a minimum tensile strength of 27 ksi (186 MPa).

653-2.2.1 Die Castings: Meet the requirements in ASTM B85 for the physical characteristics and chemical content for alloys S12A, S12B, SC84A, SC84B, SG100A and SG100B.

653-2.2.2 Sand Castings: Meet the requirements in ASTM B26 for the physical characteristics and chemical content for alloys S5A and CS72A.

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The pedestrian signal must include a terminal block containing a minimum of three circuits, each with two noncorrosive screw-type terminals. Each terminal must accommodate three No. 18 AWG conductors and be labeled for ease of identification. The terminal block must not be obstructed and be visible when the housing is open.